THE DIMENSIONAL STRUCTURE OF CHILDREN'S PERCEPTION OF TELEVISION CHARACTERS

DISSERTATION FOR THE DEGREE OF PH. D.

MICHIGAN STATE UNIVERSITY
BYRON B. REEVES
1976

This is to certify that the

thesis entitled

The Dimensional Structure of Children's Perception of Television Characters

presented by

Byron B. Reeves

has been accepted towards fulfillment of the requirements for

Ph.D. degree in Communication

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Date February 20, 1976

ABSTRACT

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By

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The purpose of this study was to examine the perceptual dimensions used by children to differentiate television characters. The utility of these dimensions in predicting media effects and subgroup differences in dimension content were also examined.

All past research in this area had used dimensions defined by the researcher as important in understanding television's impact on children. Therefore, the methods used to define the dimensions without suggesting their content were very important in this study.

Multidimensional scaling of 14 TV characters was accomplished by asking third, fifth, and seventh graders to judge whether all possible pairs of the sample of characters were alike or different. This method had the advantage of letting children differentiate among the characters by whatever attributes they chose to think about. These results were then compared with unidimensional evaluations of characters on attributes defined by pre-test and past research.

Four interpretable dimensions were found from the multidimensional analysis. In decreasing order of variance explained in the final solution they were: unsupported humor, masculine strength, feminine attractiveness, and activity. An hypothesis that older

children would use more dimensions to differentiate TV characters than younger children was not supported.

One hypothesis concerning developmental differences in dimension content was supported. Younger children were more reliant on dimensions descriptive of physical attributes (strength and attractiveness) and older children depended more on the dimensions descriptive of TV character's behavior (unsupported humor and activity).

Although no hypotheses about sex differences in dimension content were made, two sex differences were found. Males weighted support and strength more than females, and females weighted attractiveness more than males. Good was related to strength for males and to attractiveness for females.

For the total sample of children, the four dimensions predicted whether they wanted to be like or "do" like television characters. The strength and activity dimensions predicted these measures best for the males and attractiveness predicted best for the females.

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Communication

1975

ACKNOWLEDGMENTS

Bradley Greenberg was my advisor and critic. Recognition goes first to him for his time and encouragement during the preparation of this dissertation and throughout my graduate education.

Three other committee members, Charles Atkin, Edward Fink, and Ellen Strommen, are to be thanked for their assistance and review of the dissertation.

Two school principals and numerous teachers allowed us to interrupt classrooms and interview their students. For this assistance, thanks go to Mr. Doonan, principal of the Murphy Elementary School, Haslett, Michigan; Mr. Farr, principal of the Haslett Middle School, Haslett, Michigan; and teachers at both schools. I also appreciate the interviewing done by Roxanne Reeves and Mark Milkovich, both graduate students at Michigan State University.

Finally, I acknowledge the help of Mark Miller, a friend who shared the more informal atmospheres where good ideas are often conceived.

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Chapter I

INTRODUCTION

In studying cognitive processes that intercede between children's exposure to television and their use of TV information, researchers have assumed that several perceptual dimensions are operative. Studies have examined the effects of intervening variables such as the perceived reality of TV portrayals (cf. Greenberg and Reeves, 1974; Feshbach, 1971); differential impact of male and female characters (cf. Atkin and Miller, 1974; Miller and Reeves, 1974); amount of violence attributed to characters (cf. McLeod, Atkin, and Chaffee, 1971); the amount of support received from other characters (cf. Walters and Parke, 1964; Bandura, Grusec, and Menlove, 1967); and the character's race (cf. Greenberg, 1971; Greenberg and Hannenman, 1969).

Children recognize and sort different portrayals using perceptual dimensions that may shift with age, sex, or any of several environmental influences. To young children, a TV character may be primarily funny; to an older child the same character may be active; to a male, strong; or to a female, physically attractive. The assumption has been that an understanding of these dimensions is an important prerequisite to accurately describing media effects.

A criticism of this assumption is that perceptual dimensions defined a priori by the researcher may be inaccurate. Dimensions such as reality, sex, violence, race, etc., are forced upon children regardless of whether they represent the primary evaluations that children make of television characters. Even if they do enhance

prediction of media effects, there is still no way to insure the accuracy of their use in relation to other dimensions which cannot be anticipated.

Mass communication literature is void of studies which attempt to empirically derive the dimensions children use to differentiate TV characters. Psychological research, however, does deal with the more general issue of person perception, including developmental differences in the quantity, type and salience of attributes used to describe other people.

The research reported here will attempt to integrate the findings from research on person perception with children's perception of television characters. Although there may be perceptual differences between TV characters and people in real life, these studies deal with cognitive processes most likely generalizable to a variety of phenomenon.

Specifically, the study will deal with three issues: 1) identification of the underlying perceptual dimensions children use to differentiate TV characters; 2) a description of developmental and sex differences in the use of perceptual dimensions; and 3) the relation of these dimensions to children's acceptance and application of TV characters' behaviors.

General Considerations in Person Perception

Person perception research recognizes that attributes of an individual are more a function of the perceiver than of the person being perceived (Dornbusch, et al., 1965). There are few inherent qualities of a person or television character that will be recognized in

the same way across observing individuals. If this were not true, content analysis of character traits would adequately describe the prominent qualities that distinguish TV characters, regardless of whether the perceiver was male, female, child or adolescent.

Furthermore, it is likely that one person's description of several people will be more consistent than several people's description of one person. This individual consistency implies that people use a uniform category scheme to describe others (Hastorf, Richardson, and Dornbusch, 1958). There appears to be no reason not to assume that children use consistent attributes in categorizing and describing TV characters.

It is the pattern of perception across individuals, however, that allows the researcher to make the most general use of results. Although individuals may be more consistent than aggregates of people, findings that apply to groups will have the most implications for understanding television's impact on children. Consistencies among aggregates are more descriptive of cultural processes and, therefore, are more useful in understanding the societal impact of a mass medium. To the extent that individuals conform to group perceptual processes, this understanding will be more accurate.

One of the most important issues in person perception concerns the nature of an attribute or descriptive category. Some cognitive psychologists (e.g. Bruner, 1957; Gibson, 1963) suggest that categories of description are nominal and qualitative.[1] This simply

[1]These studies are reviewed by Wegner in a dissertation entitled "The Development and Articulation of Attributes in Person Perception," Department of Psychology, Michigan State University, 1974.

means, for example, that if a child thinks a TV character is funny, that character is categorized with other funny TV characters. Mathematically, nominal categories of perception are best represented using set theory (Bieri, et al., 1966, cited in Wegner, 1974).

A nominal view of perception does not require that categories or attributes be relevant to every person. Some attributes could be unique to subsets of people. For example, the category "serious" may not apply to any of a young child's favorite TV characters.

A perceiver's response to a new person is defined by the other people in the category or "set." Past responses associated with other members of a category are attached to new people and old responses are generalized to new stimuli. If a child perceives a TV character to be funny, for example, responses to past characters perceived as funny will be applicable to the new portrayal. The relative "funniness" of the new character compared to others already in the category should not alter the child's responses.

It is not difficult, however, to imagine situations where an attribute is applicable to different people as a continuous evaluation. This would be especially true for TV characters. The majority of portrayals represent a rather homogeneous group of people. All dramatic heroes, for example, may be good looking, but most children could probably further differentiate the characters in terms of their relative attractiveness.

In this sense, people are assigned a value on some attribute dimension rather than merely being grouped with others having similar attributes. It is this attribute value that correspondingly defines one person's response to another.

This dimensional model of perception holds that people are assigned a value along some attribute dimension and responses to people are based on that value. In contrast to a set theory representation of nominal attributes, the dimensional model is often represented by a geometric space (cf. Carrol and Wish, 1974; Woelfel and Burnett, 1974; Sherman, 1972). Attributes are dimensions in a space, and objects, or in this case people, are points in the space. Psychologically, the dimensions are assumed to correspond to fundamental perceptual processes. The projection of a person on a dimension indicates the perceived value for that person on the attribute represented by the dimension.

The dimensional model of perception will be used in this study. This model is more consistent with available literature on children's perception of TV characters and it represents a more descriptive way of defining multidimensional perceptual processes.

To accept a nominal classification of attributes would mean that no additional information is obtained by differentiating people within a given category. The relative "funniness" of two characters, for example, should be no more predictive of the characters impact than the knowledge that they are both characterized as funny. There are, however, media studies which attribute differential effects of TV characters to <u>different amounts</u> of a perceived quality. For example, while several TV characters are perceived by children as real, different amounts of perceived reality will better predict media effects than a dichotomous analysis of whether the quality "real" is present or absent (Greenberg and Reeves, 1974). By arraying TV characters

in a multidimensional space, the characters' values on several of these attributes can be simultaneously examined.

Description of the continuous dimensions used by children to evaluate TV characters is the primary emphasis of this research. Television characters may vary with respect to one or several underlying perceptual dimensions. These dimensions may be restructured during development. They may individually or collectively predict which TV characters will have the greatest impact on children's attitudes and behavior. The following sections will discuss dimension content, developmental changes in the number and content of dimensions, and the relation of perceptual dimensions to television effects.

Dimensions of Perception

In this section, hypotheses will be formulated that project which dimensions children use to differentiate TV characters. While psychological research on person perception offers guidelines relevant to the process of dimensional development and change, no literature has examined the dimensional content regarding perception of TV characters. The only studies that deal with perception of TV characters begin with one or occasionally several dimensions defined by the researcher as important. No attempt has yet been made to empirically derive a set of the dimensions from data on children's evaluations of TV characters.

Two different types of research will be used to suggest perceptual dimensions. Some studies explicitly ask children to volunteer attributes that describe TV characters. These studies are obviously

the most helpful because they do not assume a perceptual process but rather attempt to define the process.

Other research has tried to determine whether hypothesized perceptual dimensions will result in differences on some dependent measure. In these studies the research emphasis is usually on differences in behavior caused by a perceptual dimension rather than whether the dimension is actually used. If, by manipulating some attribute of a TV model, differences in attitude or behavior occur, then the dimension is assumed to exist. These assumptions have validity to the extent the dimensions indeed produce differences in behavior. However, the addition of other confounding influences in these studies makes their application to this research somewhat less direct.

The dimensions hypothesized in this section are founded on both types of research. Even these studies, however, are few. Other dimensions and rationales for their inclusion will be based on personal speculation and interviews with elementary school children.

Two major types of dimensions will be hypothesized to emerge: 1) dimensions that describe the physical aspects of TV characters, and 2) dimensions that describe TV characters' behaviors. It would be unreasonable to expect that all of the hypothesized dimensions will be operative for large groups of children. Given the exploratory nature of this analysis, however, the concern is to identify a set of attributes which could reasonably occur rather than predict the subset that will occur. This method provides 1) an oversampling of dimensions to maximize the probability that dimensions actually used

by children are included in the research and 2) a rationale for why a dimension might have emerged if it is later found in the data.

Four dimensions of physical description will be hypothesized. They are sex, age, physical strength and physical attractiveness.

Sex. Several studies, especially recent efforts, show that children do differentiate TV characters on the basis of sex and that this distinction is related to the impact TV characters have on children's own perceptions. Miller and Reeves (1975) found that third through sixth grade children used sex to distinguish occupational portrayals on TV.

The distinction between females and males in these roles predicted children's perception of how appropriate it was for a female to work in a traditionally male position and how many females the child thought were actually working in the area. For both sexes of children the perception of appropriateness and the number of females in the occupation increased as exposure to the characters increased.

Atkin and Miller (1975) found in an experimental setting that children who saw women portrayed in counterstereotypical occupations were more likely to endorse those occupations as appropriate for women than were children who did not see the portrayals. Beuf (1974) found that among 3-to-6-year-olds heavy television viewers hold more stereotypical perceptions of sex roles than do light viewers. Children are also more likely to imitate same sex models (Bandura, 1969), and to choose same sex TV characters as people they would most want to be like (Miller and Reeves, 1975). It is therefore hypothesized that:

H1: Children will differentiate television characters on the basis of the character's sex.

Age. No studies have explicitly examined whether children distinguish old from young TV characters or whether children are more likely to be affected by characters from certain age groups. Psychological research on imitation, however, does show that children will imitate real life models they perceive to be like themselves more than models who they think are different (Stotland, 1961; Bandura, 1969). Age should be an obvious candidate to contribute to observer-model similarity.

Research on observer-model similarity says that children either told they have qualities in common with a model or who perceive they are similar to a model are more likely to imitate the model's behavior than those children who perceive no common characteristics. Stotland (1961) explains the increased imitation in terms of needs for cognitive consistency. If children perceive a model as similar to themselves, they are more likely to adopt other characteristics of that model because a model like themselves would only perform acceptable behavior. It is hypothesized that:

H2: Children will differentiate television characters on the basis of the character's perceived age.

Physical strength. The inclusion of strength as a perceptual dimension is based on personal interviews with third through sixth graders about which TV character they most want to be like and why (Miller and Reeves, 1975). Physical strength was cited several times by males as a rationale for modeling, indicating at least a recognition of variation in TV character's strength.

Considering the characters most frequently viewed by elementary school children, strength is a dimension which also has a large variance among portrayals. Differences in cartoon characters, situation comedy roles, male vs. female characters, and dramatic heroes and heroines should increase the likelihood of a physical strength dimension. Thus:

> H3: Children will differentiate television characters on the basis of the character's perceived physical strength.

It is less clear whether strength is more a physical than behavioral attribute of television characters. For some portrayals strength could only be inferred from characters' behaviors. A character may have to perform an act of strength before the attribute is applicable. As used here, strength is meant to be indicative of physical qualities such as height, weight, or other nonverbal cues which suggest superior physical abilities.

Physical attractiveness. Just as males cited physical strength as a stereotypical evaluation of TV characters, females were likely to justify wanting to be like a favorite character because the person (usually a female) was attractive (Miller and Reeves, 1975). Similar to the strength dimension, it seems reasonable that children will differentiate characters on the basis of attributes that are highly reinforced in their lives. Strength and attractiveness are attributes which early in life have positive referents and are qualities which children should notice in TV presentations that often maximize their importance:

H4: Children will differentiate television characters on the basis of the perceived physical attractiveness of the character.

Dimensions hypothesized to describe TV characters' behavior include the perceived reality of the behavior, how funny and good the character is and how much support the character receives from other people on the same program.

Perceived reality. Compared to other perceptual dimensions, the perceived reality of TV portrayals has been frequently researched. Several studies show that TV characters are differentially perceived as being like people in real life (cf. Greenberg and Reeves, 1974; Lyle and Hoffman, 1971).

It has also been shown that reality perceptions vary across different subgroups. Children from disadvantaged families believe TV is more true-to-life than children from middle class homes (Reeves, 1974; Greenberg and Gordon, 1971); black children believe TV is more real than white children (Greenberg, 1971); perceived reality of TV decreases for older children (Lyle and Hoffman, 1971; Greenberg and Reeves, 1974); and girls tend to perceive TV as more realistic than boys (Greenberg and Dervin, 1974).

Other studies have shown that perceived reality will predict subsequent behavior. Greenberg (1974) found more aggressive behavioral intentions for children who thought TV was real. Feshbach (1971) experimentally found a similar relationship with children exposed to a "real" news story of the Viet Nam war becoming more aggressive than children exposed to a "fantasy" war movie. Hypothesis five is:

H5: Children will differentiate television characters on the basis of the perceived reality of the character's behavior.

Although this hypothesis is included with others that deal with a character's behavior, it has still not been empirically determined whether perceptions of reality are based on character's actions, on other personality and physical attributes, or both. It is assumed here that whatever qualities do influence perceived reality, they are consistent for any single character.

Humor. There is little empirical evidence that a funny dimension exists. In the study asking children to explain their choice of a favorite TV model (Miller and Reeves, 1975), some children did say they wanted to be funny. Funny was primarily a quality used by males.

Despite the lack of research on TV characters and humor, this dimension seems to be one of the more obvious attributes to include. Making children laugh is probably one of the surest ways of attracting their attention. One only need examine the TV shows containing the most advertising directed exclusively at children. Audience ratings confirm the most popular shows for children (i.e. Saturday morning cartoons, afternoon and early evening situation comedies) are based on humor. Hypothesis six is:

H6: Children will differentiate television characters on the basis of perceived humor.

Goodness. The quality "good" in TV characters has never been researched nor is there any evidence that this attribute is given as a reason to model TV characters. It will be included here as a more abstract characteristic that should correlate with other qualities generally understood by most children to have positive

connotations. For example, of the attributes already discussed, good should be related to strength and physical attractiveness. The final categories that do correlate with this evaluation can be more accurately combined into a composite dimension if this abstract quality is included. Hypothesis seven is:

> H7: Children will differentiate television characters on the basis of how good the character is perceived to be.

Support from other characters. Three studies on the effects of televised violence indicate that characters supported for their actions are different from and imitated more than characters who are not. Bandura, Ross and Ross (1963) exposed four groups of nursery school children to filmed aggressive models. Children who observed the aggressive model rewarded displayed more aggression in a play situation than did children who saw an aggressive model punished, an active but non-aggressive model with no reaction, or no exposure to a model. Those who saw the aggressive model punished did not differ from the remaining two groups. These findings substantiate that vicariously experiencing a reward will influence a model's impact on children.

Two other studies (Walters and Parke, 1964; Walters, Leat, and Mezei, 1963) examined the effects of a filmed model on pre-school and kindergarten males' ability to resist temptation. In both experiments, children who witnessed disobedient models being rewarded aggressed more than those who saw the model being punished.

Bandura, Grusec and Menlove (1976) applied similar experimental manipulations to the imitation of a model's prosocial behavior.

Social rewards dispensed in response to usually positively sanctioned behavior increased the likelihood of children's imitation in magnitude similar to the aggression studies. These findings suggest that children will discriminate between TV characters on the basis of other character's reactions to their behavior. Hypothesis eight is:

> H8: Children will differentiate television characters on the basis of the perceived support the character receives from other characters.

In summary, eight perceptual dimensions were hypothesized. Four were related to physical qualities (sex, age, physical strength, and physical attractiveness) and four related to TV character's behavior (perceived reality, humor, goodness, and support of the character's behavior by other characters on the program).

Certainly some dimensions will be more important than others. At this time, however, there is no basis for predicting the relative contribution of each attribute to an overall dimensional structure. The research cited on each attribute merely suggests that such a dimension might exist.

It also must be remembered that most of the studies forced children to make judgments about characters along an attribute continuum. No attempt was made to empirically derive the dimensions from data which did not name specific attributes. It could very well be that characters do differ on some of these qualities and that children recognize these differences, but that the differences are not operative for children in any systematic way.

Developmental Differences in Perceptual Dimensions

Considerably more data is available on the process of dimensional change than on the content of perceptual dimensions. Although none of these data are specifically related to perceptions of media content, changes in dimension structure should be applicable across different content areas.

This section will deal with developmental changes in children's perception of television characters. Two hypotheses will be made about age-related changes in 1) the number of perceptual dimensions used to distinguish TV characters and 2) qualitative differences in the dimensions.

One aspect of development which most psychologists agree on is that children generally progress from simple to complex modes of understanding. For learning theorists, this progression is dependent on experience with the environment and different patterns of reinforcement (cf. Skinner, 1953; Bandura, 1969). For cognitive developmental theorists, changes in complexity of perception are linked to developmental stages which define the upper bounds of understanding (Piaget, 1953; Bruner, 1964). Despite these fundamental differences, however, both kinds of theories predict that children become more complex as they age.

With this theoretical support, a prediction that the number of perceptual dimensions used by children will increase as age increases seems well founded. Studies examining this question, however, disagree depending on the methods used to test the hypothesis. The use of naturalistic descriptions of other people (Peevers and Secord,

1973) or checklists of descriptive traits (Yarrow and Campbell, 1963; Livesley and Bromley, 1973) show that the number of attributes used to describe people increase as children become older. These findings agree with the established idea that complexity of person perception is associated with the use of a larger number of descriptive qualities (Peevers and Secord, 1973).

A multidimensional study of person perception in children, however, did not find an increase in dimensions. The dimensional structure of third, sixth and ninth graders was similar with respect to the number and nature of perceptual dimensions (Olshan, 1971). By using Kruskal's non-metric multidimensional scaling program (Kruskal, 1968), the author showed that for all three age levels a two or three dimensional structure adequately represented a sample of 30 traits. Similarity between the traits was determined by having children sort them into ten piles. A measure of trait co-occurence was then obtained for each possible pair of traits and these measures were input into the multidimensional scaling program.

This contrary finding has been criticized because the method used to determine the number of dimensions (multidimensional scaling) is a technique designed to achieve maximum parsimony from a set of concepts (Peevers and Secord, 1973). The two methods for analyzing the number of operative perceptual dimensions, however, are possibly even more different than they first appear. Analyzing the mean number of adjectives used by individual children to describe others is very different from scaling concepts in an n-dimensional geometric space. The first measure would be quite sensitive to shifts in the

use of descriptive words and it is possible that differences across age could be explained in terms of language development alone. Multidimensional scaling, however, would be less sensitive to age-related changes in vocabulary because the dimensions are determined by scaling similarity ratings of concepts. For structural changes to occur, children would have to differently judge two concepts in terms of their proximity to each other.

Although the multidimensional technique used by Olshan seems to be most representative of true developmental shifts in the number of perceptual dimensions, this one study cannot negate the notion that dimensional complexity increases with age. This study does show, however, that for this research question, different methods have yielded opposing results.

It will be hypothesized here that additional dimensions will emerge for older children. The available evidence on developmental changes in cognitive complexity is too overwhelming at this time to support a null version of this expectation. Hypothesis nine is:

> H9: Older children will use more dimensions to differentiate television characters than young children.

Another result suggested by increasing cognitive complexity is a shift in the content of perceptual dimensions used by children. The pattern of these changes generally has been described in terms of children's decreasing dependence on concrete physical cues (Wohlwill, 1962). As children develop they are more able to make inferences about the qualities of people and will rely less on physical properties to define others.

A major theme of cognitive developmental theorists suggests that early cognition is tied directly to concrete events and later cognition is more abstract, inferential, and generalized (Wegner, 1974). The stages of Piaget's theory of intellectual development (Piaget, 1953) follow this pattern. During the first stage, the sensorimotor period, the dominant activities are physical and motor probes into the child's immediate environment. During the second stage, children learn to symbolically represent concrete objects and to logically manipulate these representations. The final stage is devoted to propositional thinking where children learn to make inferences about objects and people based on their experiences with them.

Applying this developmental change to the perception of television characters, older children should be more capable of making inferences about character's behavior than younger children. Furthermore, younger children should be more dependent on attributes which are directly perceivable from the character's portrayal.

Differential reliance on the two groups of dimensions hypothesized in this study should test the validity of this developmental change. The dimensions which represent physical properties of characters (sex, age, physical strength, and physical attractiveness) should be used more by young children who rely on concrete physical objects to represent and react to reality.

Perceptual dimensions which require an evaluation of a TV characters' behavior and a subsequent inferential judgment about the character should be used more by older children. These character attributes (perceived reality, humor, goodness, and support received

from other characters) require children to observe a behavior and then, on the basis of the observation, evaluate the character on a relevant attribute dimension. The specific hypothesis is:

> H10: Younger children will be more dependent on perceptual dimensions describing physical properties of TV characters (i.e. sex, age, physical strength, physical attractiveness) than older children who will depend more on dimensions describing TV characters' behavior (i.e. perceived reality, humor, goodness, and support received from other characters).

These hypotheses do not identify specific ages. The expectation is that these changes will be continuous developments from the time children begin watching television consistently (about age 2-3) to early adolescence (approximately age 13). Tests of these hypotheses would ideally sample children in this entire age range. However, the most fundamental information processing changes should occur for school age children (ages 5 to 12). These ages roughly correspond to the second and third stages in Piaget's conception of intellectual development.

It should also be noted that age is used only as an approximation of development. It is entirely possible that same-age children would interpret TV information differently due to different developmental experiences. Cognitive stages are not universally applicable to certain age groups and should not be confused with biological maturation. Connections between age and stage of cognitive development reported by various researchers are only guidelines reflecting the development of a particular sample under study.

Using age rather than level of cognitive development has, however, two advantages. First, a reliable measure of cognitive development has not yet been developed. Very elaborate measurement techniques have yielded inconsistent results. Also, different techniques have disagreed depending on whether self-report or behavioral measures were obtained. Second, age differences are more directly applicable to policy decisions. It would be much easier, for example, to implement an in-school media program for third graders than for children at a certain stage of development.

Sex Differences in Perceptual Dimensions

As mentioned earlier, there is evidence that males and females are different in terms of the saliency of some perceptual dimensions (e.g. physical strength and attractiveness). There is, however, very little literature on person perception and on sex differences in general that would suggest profound sex differences in the perception of TV characters.

One of the few sex differences that is agreed upon by most psychologists and has been documented in several studies is that males are more aggressive than females.[1] In media research, this finding is common in the studies on television and aggression (cf. McLeod, Atkin and Chaffee, 1971). This would lead to the prediction that perceptual dimensions related to aggression would be more important for males than females. From among those dimensions

[1] For an extensive review of this literature, see Maccoby and Jacklin, The Psychology of Sex Differences, 1975.

hypothesized in this study, physical strength should be more important for males than females.

Sex differences in the other hypothesized dimensions do not have empirical support from past studies. Even the obvious dimensions such as physical attractiveness (when operationalized as "good looking") have not consistently shown sex differences (Maccoby and Jacklin, 1974).

No formal hypotheses will be made concerning sex differences in the perception of TV characters. There is too little theoretical or empirical evidence to predict sex differences in the process of dimension changes at different ages.

While there is some basis for predicting differences in the content of dimensions, these hypotheses would have to assume that the particular dimensions will emerge. As has already been mentioned, it is not known what dimensions will be used by children to differentiate TV characters. The dimensions suggested represent reasonable expectations, not empirically confirmed results.

Differences in the dimensional structure of males and females will be analyzed, however, because perceptions of TV characters have never been examined in the present manner. Some aspects of TV programming make sex differences a likely result. For example, the ratio of male to female characters on prime time TV is 3 to 1 (Miller and Reeves, 1975). The fact that females' perceptions are mostly of males, and males' perceptions are mostly of same sex characters could account for different dimension structures. The analysis, therefore, will test for these possible differences.

Perceptual Dimensions as Predictors of Media Effects

What do perceptual dimensions tell us about the impact TV characters have on children's attitudes and behavior? Interest in the description of these dimensions is, of course, based on an expectation that they will be useful in understanding which TV characters will have the greatest affect for which children. The general expectation is that the method used to categorize a TV character will determine a child's reaction to the character and will be influential in the decision to apply the character's behavior to real life situations.

A central part of all cognitive theories deals with the effect of mental representation of stimuli on behavioral response (Bruner, 1969). Representation is not merely a memory process responsible for the retrieval of usable experience. The information processing formats by which experience is categorized for later use are just as important in determining behavior as associating past experiences with the present.

If television characters are differentiated on the basis of funniness, for example, then humor should be an important referent for applying the characters' behavior to real life. The information processing methods used to catalog character's behavior define the most salient aspects of the behavior when it is later retrieved. If this reasoning applies to perceptions of television portrayals, TV characters would be just as funny or not funny when they are first seen as when they are later remembered. The types of situations that characters' behaviors are relevant to, therefore, are determined by

the dimensions originally used to evaluate their behavior on the screen. The hypothesis is:

> H12: The dimensions children use to distinguish television characters will be related to children's imitation of TV character's behavior in real life situations.

Hypothesis 12 says that perceptual dimensions will be related to children's imitation of TV characters' behavior. Prior research on children and imitation offers several conceptual and operational definitions of imitation and numerous other concepts that subsume essentially the same phenomena. Learning by vicarious experience has been labeled imitation, observational learning, copying, social facilitation, vicarious learning, contagion, identification and role-playing. Distinctions are made between learning on the basis of types of responses, antecedent variables controlling matching responses, fidelity of imitation, generality of learning, and whether matching responses occur in the presence of a model (Bandura, 1965).

Several researchers (e.g. Gerwirtz and Stingle, 1968; Flanders, 1968; Bandura, 1965) question the validity of these arbitrary conceptual differences because essentially the same learning process is operative regardless of content, generality of what is learned, or the models responsible for the original behavior. These authors argue that such distinctions are counter-productive and should be incorporated into a single, more simple conception of behavioral alteration. In considering the mediating effects of perceptual dimensions on children's behavior, imitation will refer to behavior modifications resulting from exposure to modeling stimuli (Bandura, 1965).

One other note should be made about this hypothesis. The wording implies that all perceptual dimensions will predict children's imitation or positive inclination to imitate TV characters' behavior. There is actually no basis for expecting that all of the dimensions will fulfill this expectation, nor is there evidence to predict the relative association of each dimension with the utilization of TV characters' behavior. The hypothesis is only meant to suggest that among the dimensions used to distinguish TV characters, one or some will predict the impact of TV portrayals on real life situations.

Summary

Three sets of hypotheses were made about the perceptual dimensions children use to differentiate television characters. The primary purpose of the research is to describe the continuous dimensions that are used. Hypotheses were made for four dimensions of physical attributes (sex, age, physical strength, and physical attractiveness) and four dimensions of TV characters' behavior (perceived reality, humor, goodness, and support received from other characters).

Two predictions were made about the differences in dimensional structure for children at different ages. It was hypothesized that 1) older children would use more dimensions to distinguish TV characters than younger children and 2) younger children would rely on dimensions describing physical attributes more than older children who would rely more on dimensions describing TV behavior.

Finally, it was hypothesized that the perceptual dimensions used to differentiate TV characters would be used by children to determine which characters to imitate in real life situations.

CHAPTER II

METHODS

Data for this research were collected in several different formats. The methods used to collect and relate these data will be presented in this chapter. Before the specific methods are discussed, however, an attempt will be made to first illustrate how the different results will be related to each other.

The description and validation of perceptual dimensions used by children to distinguish TV characters will involve relationships among three independently collected sets of data. One set of data will be children's similarity judgments between all possible pairs of a sample of TV characters. The pairs of characters will be rated by third, fifth and seventh graders on a five point scale ranging from very similar to very different. This type of measure has the advantage of not suggesting which perceptual dimensions to use.

These "proximity" measures will then be used to locate the TV characters in an n-dimensional geometric space which represents a conceptual map of the perceived psychological distances between characters. Each concept or character will have a coordinate value for each dimension and each dimension will have some relation to how the group differentiates TV characters. This analysis will be accomplished using multidimensional scaling.

Another set of data consisted of nine univariate measures of dimensions hypothesized to emerge from the multidimensional space.

As these dimensions will be conceptually identifiable,[1] their correlation with distances in the multidimensional space will assist in the interpretation of the dimensions in that space.

Although this analysis will be described later in more detail, it is useful now to understand exactly what is being correlated. For example, if a sample of 15 TV characters were rated by children on a five point scale measuring how funny characters were, these ratings could be averaged across children to obtain a mean "funny" score for each of the TV characters.

If, for the same characters, children were asked to judge how similar each possible pair of characters was, the characters could also be arrayed in an n-dimensional space based on how far apart the children perceived the characters to be. For each dimension in the space, all of the characters would have a coordinate score. If the mean scores for each TV character on the unidimensional scale funny correlated highly with the coordinate scores for dimension 1, then it could be argued that the spatial dimension represented the attribute humor.

An analysis similar to this example will be performed for each dimension hypothesized to emerge in the multidimensional space. The relative correlation of each dimension with each unidimensional attribute will suggest the conceptual make-up of the dimension. The

[1]Questions will ask, for example, How funny do you think Fred Flintstone is?

Very funny	Funny	Not very funny	Not funny at all

multiple correlation of all of the dimensions with each unidimensional attribute will indicate the extent to which the attributes can be predicted from the dimensions that emerge from the space.

This type of analysis does, however, pose at least two problems. First, the data relevant to perceptions of TV characters is collapsed across several individuals. It is possible that the aggregation of several children's perceptions will result in values that are unrepresentative of individual children within the group. This would be especially true if subgroups of children exist that differ a great deal in their perceptions. If, for example, males use only the dimension "strength" to differentiate TV characters and females use only "attractiveness," an aggregation of the two sexes would yield two dimensions - strength and attractiveness. The two-dimensional solution, however, would not be representative of either sex.

This problem is solved to the extent that subgroups of children with unique perceptions can be anticipated. Grade and sex analyses of TV character perceptions are an attempt to account for subgroup differences. It must be remembered, however, that other subgroups may exist which were not included.

A second problem involves the relationship of the unidimensional measures with the spatial dimensions. To the degree that the attributes used as unidimensional measures are <u>not</u> representative of the dimensions that emerge in the space, they will not be useful in the interpretation of the space. The tentative basis for the hypothesized perceptual dimensions makes this outcome even more probable.

Given this possibility, a third set of data was collected. As mentioned earlier, in hypothesizing which dimensions will emerge, an attempt was made to include all the dimensions which could reasonably be used by children to distinguish TV characters rather than predict exactly which ones will occur. Interviews were conducted with children to determine if there are dimensions of character differences which were not included. These interviews also helped confirm the validity of the dimensions already hypothesized.

A discussion of the methods used to collect and analyze these three sets of data follows. The discussion will progress in the same sequence that the data were collected. The first section reports on the pre-test interviews conducted to probe for additional unidimensional attributes. Second, the similarity judgments and multidimensional scaling will be presented followed by a discussion of the unidimensional measures. A final section will deal with the measures of children's use of TV characters' behavior.

Individual Interviews

Individual interviews were conducted with elementary school children to determine if other dimensions than those postulated in Chapter I should be included as unidimensional measures. Third, fourth, and fifth grade students (N=98) from an elementary school in Mason, Michigan were interviewed during regular classes on two consecutive days in May, 1975. The interviews were conducted by fifteen undergraduate students at Michigan State University.

Interviewers first asked each child to name two favorite TV characters and two characters they did not like. The six questions that

followed asked them to describe the differences between each possible combination of characters that were named. The specific question was, "How is character A different from character B?" This question forced comparisons between liked and disliked characters, maximizing the potential for different dimensions of comparison to occur.

Every difference description given by the children was written down by the interviewers. Each comparison also included a probe that asked "Is there anything else?" in reference to additional differences between the characters (see Appendix A for a complete copy of the interview schedule used).

In analyzing children's responses, an attempt was made to define perceptual dimensions that were not hypothesized in Chapter I. Each response was examined to determine if it was similar to any of the previously hypothesized dimensions. A separate count was made of those attributes not included among the previous set. One coder analyzed all of the responses.

Several of the attributes named were not in the set of originally hypothesized dimensions. Most of these, however, were named by less than three children. These qualities were usually unique to a particular character in the comparisons. Attributes named by more than three children that were not covered by the original dimensions are listed below in order of frequency of occurence (numbers refer to frequency of mention):

Does a lot of different things (14)
Moves fast (9)
Ownership of property (6)
Different methods of killing or using violence (5)
Leadership (5)
Differences in occupation (4)
Differences in ability to perform a special behavior (4)

Including all of these additional attributes would have been difficult. Assuming a sample of 14 TV characters, to measure each character on the eight attributes already hypothesized would have required asking each child 112 questions. Additional attributes increase the number of questions by 14.

Given the large number of responses about characters "doing a lot of different things" and "moving fast," it was decided to add a dimension called activity. None of the other responses from the open-ended questions were included due to the number of additional questions that would have been necessary.

Detailed age and sex breakdowns of these responses were not made. The purpose of this pre-test was only to see if additional dimensions should be added to the study. The final group of attributes to be used now includes four dimensions of physical description (sex, age, physical strength and physical attractiveness) and five dimensions that describe TV characters' behavior (perceived reality, humor, goodness, support received from other characters and activity).

Group Interviews

At this point the final two sets of data -- similarity judgments of TV characters for the multidimensional scaling and ratings of the characters on the unidimensional measures -- were collected. The sample consisted of two third, fifth, and seventh grade classes from an elementary and middle school in Haslett, Michigan (total N=210). There was an approximately equal number in each grade and sex (exact breakdowns will be given separately for each set of data).

Separate questionnaires were used for the multidimensional and unidimensional data. For the third and fifth graders, questionnaires were group administered in two sessions during regular class hours. Each administration lasted about 30 minutes.

For the seventh graders, both questionnaires were given at the same time. The one administration lasted 40 minutes. All data collection was monitored by graduate students with considerable experience in collecting data from children.

Multidimensional Data and Analysis

The primary methodological concern in this study was not to suggest dimensions with the questions used to obtain the data. If you ask a child if character A is funny, you force an evaluation of the character on the attribute funny even if that quality is not a primary dimension used to differentiate TV characters.

Multidimensional scaling is in most cases based only on the perceived similarity between concepts. According to Helm, Messick and Tucker (1959):

> The fundamental concept in multidimensional scaling is psychological distance, which is usually estimated in terms of judgments of similarity among stimuli; i.e., two stimuli judged to be very similar are considered to be psychologically closer than two stimuli judged to be very different. Given judgments of similarity among all stimuli in a set, mathematical models exist which provide an interpretation of these psychological distances in terms of Euclidean geometry. The stimuli are treated as points in a Euclidean space, and analytical techniques are available to obtain the dimensionality of the space as well as stimulus scale values determined within a rotation and translation.

The procedure is analogous to physical distances (as, for example, between cities). If it were known how far apart in miles

each city in a state were from each other city, there would be only one way to geographically display the distances. The space would correspond perfectly to a geographical map of the area.

This is exactly what was done with a sample of television characters. Each child made proximity or similarity judgments between all possible pairs of TV characters and the resulting similarity matrix was converted into a multidimensional space. This was accomplished using INDSCAL, a multidimensional scaling program. The following sections will describe: 1) the sample of TV characters used; 2) how the similarity judgments were obtained; and 3) the specifics of the INDSCAL program.

Sample of TV characters. Fourteen TV characters were chosen for the analysis. They were selected on three criteria: 1) maximization of children's awareness of the characters; 2) representativeness of the sample in relation to other TV characters seen by children; and 3) maximization of variance on the hypothesized dimensions. Since the children used in the survey spanned a considerable age range, only characters from programs beginning before 9:00 p.m. were considered to further increase familiarity with the entire sample. The characters chosen were:

Laura on "Little House on the Prairie"
Mary Tyler Moore on "The Mary Tyler Moore Show"
Reed on "Adam-12"
Fred Sanford on "Sanford and Son"
Fred Flintstone on "The Flintstones"
Gilligan on "Gilligan's Island"
Samantha on "Bewitched"
Hawkeye on "M*A*S*H"
Archie Bunker on "All in the Family"
Chico on "Chico and the Man"
Steve Austin on "The Six Million Dollar Man"
Fat Albert on "Fat Albert and the Cosby Kids"
John-Boy Walton on "The Waltons"
Marshal Dillon on "Gunsmoke"

A brief description of the characters is in Appendix B.

The maximum number of characters chosen was mostly governed by the number of paired similarity comparisons that are required for a given number of concepts (defined by $n(n-1)/2$). With fourteen characters the number of judgments is 91. It was believed that the addition of any more characters would have made the questionnaire burdensome, especially for third graders. Also, this sample seems to adequately represent the available pool of recognizable characters.

Neilsen audience ratings indicated the programs these characters were taken from were among the most popular children's shows. Only a few additional shows received the same audience percentage and these were mostly other Saturday morning programs.

It is important to use popular characters to minimize the amount of missing data in the similarity ratings. For all grades, only three characters were not known to all of the children; Laura, Chico and Reed. For these characters, there was less than 2% missing data.

Choosing characters that maximized variance on the hypothesized perceptual dimensions was more difficult. It is quite possible that in the multidimensional analysis different samples of TV characters could result in different dimensional structures. If the sample was all male characters, for example, a sex dimension would not emerge; if all were policemen, a funny dimension would probably not be apparent, etc.

The best argument for the representativeness of the sample is the fact that all rejected candidates are similar to characters already included. For example, Steve Austin, Reed and Marshall Dillon represent most all of the police/detective characters; Chico, Archie Bunker, Mary Tyler Moore and Fred Sanford represent the situation comedy characters, etc. Nevertheless, it should be remembered, especially for the multidimensional data, that the dimensions that do emerge are definitely a function of the sample of characters used.

Similarity judgments. Judgments were obtained for the 91 possible pairs of TV characters to determine how "far apart" characters were perceived to be. The specific question used to obtain the judgment was:

> "What do you think about Fred Flintstone and Gilligan?" Are they:
>
> | | | | | |
> |---|---|---|---|---|
> | very much alike | alike | I'm not sure | different | very different |

This format was repeated for all of the character pairs. The judgments were coded from 1 to 5, with the higher number representing a greater perceived difference between the characters (see Appendix C for a complete copy of the questionnaire).

With the completion of this questionnaire, a matrix of similarity scores was computed for each child. Individual subject's similarity matrices averaged across subjects in a particular subgroup (e.g. each of the three grade levels) served as input for the multidimensional scaling program.

In the administration of this questionnaire, each item was read aloud for the third graders. The fifth and seventh graders were allowed to proceed at their own pace after the instructions were read as a group. Completed questionnaires were obtained for 202 children. The grade and sex breakdown is as follows:

	Third grade	Fifth grade	Seventh grade	Total
Males	36	33	26	95
Females	31	33	43	107
Total	67	66	69	

Overall, children judged TV characters to be more different than they were similar. The mean similarity ratings for all subgroups were well above the midpoint of the scale (scale ranged from 1 to 5, with 5 representing the greatest perceived difference). Characters were most different for younger children and females.

Averaging across children in each age group and sex gave the following mean similarity scores and average standard deviations for the 91 paired comparisons:

	Third grade	Fifth grade	Seventh grade	Row means
Males	$\bar{X}$=3.68 s.d.=1.16	$\bar{X}$=3.58 s.d.=1.11	$\bar{X}$=3.50 s.d.=1.03	$\bar{X}$=3.59 s.d.=1.10
Females	$\bar{X}$=3.99 s.d.=1.05	$\bar{X}$=3.86 s.d.=1.07	$\bar{X}$=3.79 s.d.=0.97	$\bar{X}$=3.86 s.d.=1.02
Column Means	$\bar{X}$=3.82 s.d.=1.10	$\bar{X}$=3.72 s.d.=1.09	$\bar{X}$=3.68 s.d.=0.99	

The complete distance matrix for each grade by sex subgroup is in Appendix D.

A reliability estimate for the similarity ratings was obtained by repeating three paired comparisons throughout the questionnaire. The two responses to each question were correlated across subjects. The average zero-order correlations for these three measures are shown below:

	Third grade	Fifth grade	Seventh grade	Male/ female average
Males	.50	.71	.57	.61
Females	.37	.73	.65	.63
Grade average	.48	.73	.63	
Overall average	.62			

These reliability estimates indicate a rather unusual pattern. The similarity comparisons were most consistent for the fifth graders followed by the seventh and third graders. This is counter to the general notion that reliability estimates for data obtained from children will increase with the age of the children.

The values for the third graders in particular are low enough to cause some concern. These estimates, however, are based on the consistency of individuals and not groups. All of the analyses in this study used values aggregated across several children. Although estimates of the group reliabilities are not possible because the children were not interviewed at two different times, the group values would likely be more encouraging.

The INDSCAL program. Multidimensional scaling in general is a technique for arraying concepts in an n-dimensional space. The

output is typically a single configuration of points, one point for each stimulus, in one or more dimensions. The typical input to multidimensional programs is an n x n matrix whose cells are similarity measures aggregated across subjects (cf. Shepard, 1962; Kruskal, 1964; Woelfel and Barnett, 1974). Distance between concepts in these models is computed using the standard formula for ordinary Euclidean distances (Torgeson, 1958):

$$d_{jk} = \sqrt{\sum_{t=1}^{r}(y_{jt} - y_{kt})^2}$$

where d_{jk} is the distance between stimulus j and k, and y_{jt} and y_{kt} are the coordinates of stimulus j and k on dimension t.

The INDSCAL model (for INdividual Differences SCALing) uses as input an m x n x n (subjects x concepts x concepts) matrix of similarity scores (Carroll and Wish, 1974). This means that for each subject (or in this study, subgroup) a separate concept by concept similarity matrix is input.

The output for INDSCAL consists of two matrices as opposed to one for the n x n matrix input. All of the subgroup similarity matrices are first combined into a group space and a coordinate value is computed for all concepts on each dimension. A second matrix defines subgroup weights for each dimension based on the similarity ratings for each subgroup.

An example of the two types of output are shown in Figures 1 and 2. Figure 1a shows nine concepts (e.g. TV characters) arrayed in a two dimensional space. This space was determined by combining similarity matrices from six different subgroups.

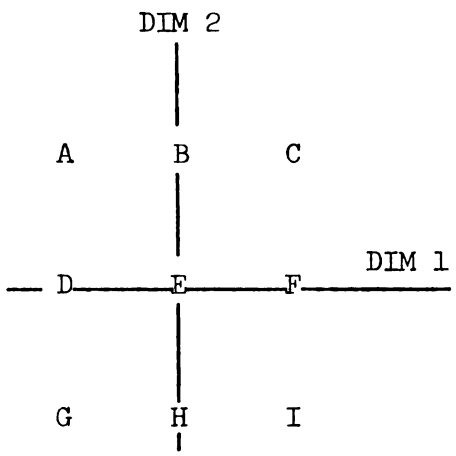

Figure 1a
Total Group Concept Space
(Hypothetical)

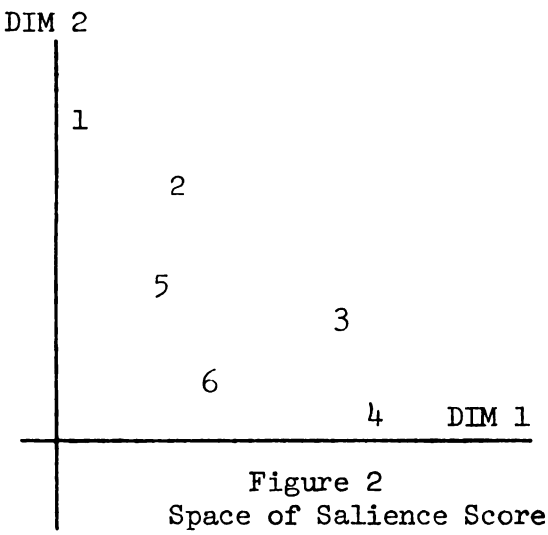

Figure 2
Space of Salience Scores
for Six Subgroups
(Hypothetical)

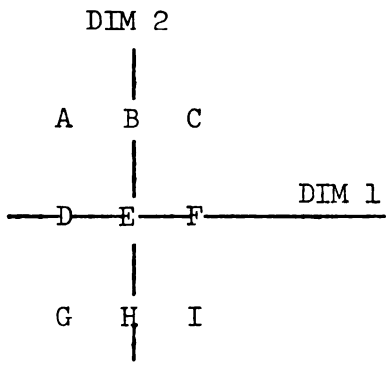

Figure 1b
Concept Space for Subgroup 2
(Hypothetical)

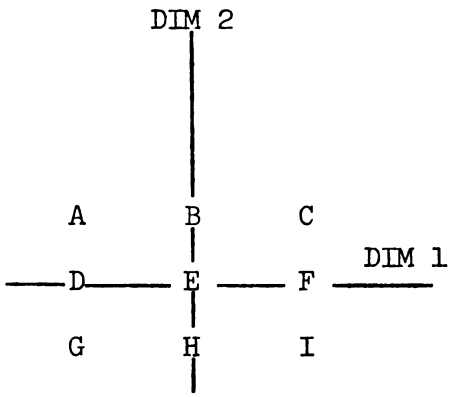

Figure 1c
Concept Space for
Subgroup 3
(Hypothetical)

Figures taken from J. Douglas Carroll and Myron Wish, "Models and Methods for Three-Way Multidimensional Scaling," in Contemporary Developments in Mathematical Psychology, 1974.

Figure 2 shows the second form of output, subgroup salience scores. The points in this space represent six subgroups (e.g. three grades by two sexes). The weights for each dimension indicate the extent to which each subgroup uses the dimension in distinguishing the concepts in the sample. These weights, called salience scores, are approximately equal to the proportion of variance accounted for in the similarity score matrix for each particular subgroup.

Examples of the spaces for subgroups 2 and 3 are shown in Figures 1b and 1c. They show how the group concept space is restructured to maximally conform to the subgroup space.[1] Subgroup 2 has a high value for dimension 2 and a low score for dimension 1. Consequently, the space for that subgroup is stretched on dimension 2 to indicate the higher salience of that dimension (Figure 1b). The reverse is true for subgroup 3 (Figure 1c).

The INDSCAL model assumes then that all subjects use the same dimensions but that there are subgroup or individual differences in the extent to which each dimension is used. It is theoretically possible, however, for a subgroup to use only one dimension from a multidimensional solution. Subgroup 1 in Figure 2, for example, has a high salience score for dimension 2 and a score of zero for dimension 1.

Mathematically, the use of salience scores adds a weighting factor to the computation of ordinary Euclidean distances. The

[1]Dimensions in the group concept space are actually stretched and shrunk until distances in the space correlate maximally with the similarity ratings for each subgroup in the analysis.

formula for distance in INDSCAL is:

$$d_{jk} = \sqrt{\sum_{t=1}^{r} w_{it} (y_{jt} - y_{kt})^2}$$

where w_{it} is the weighted metric for subgroup i.

Using INDSCAL to analyze the similarity ratings for 14 TV characters will yield two spaces. First, each TV character will be arrayed in an n-dimensional space and coordinate values for the character will be computed for each dimension. Second, the six subgroups (three grades by two sexes) will be arrayed in an n-dimensional space where the coordinate values represent the extent to which the subgroup uses each particular dimension to distinguish TV characters.

Unidimensional measures. To validate and describe the dimensions that emerged in the multidimensional space, unidimensional ratings were obtained for each character on the nine hypothesized perceptual dimensions. These questions were on a separate questionnaire that was administered the day after the similarity ratings for the third and fifth graders, and immediately after the completion of the first questionnaire for the seventh graders. This questionnaire was administered second so the attributes would not suggest dimensions that should be used for the similarity judgments.

Seven third and fifth grade students were not present for the second day of the study which lowered the total sample filling out both questionnaires to 195.

There was one question for each of the eight hypothesized perceptual dimensions. Each child rated all 14 characters on all of

the attributes.[1] The specific questions which appeared in a constant order were:

> How funny do you think character A is?
> How active do you think character A is?
> How good looking do you think character A is?
> How strong do you think character A is?
> How much like a real person is character A?
> How good do you think character A is?
> How old do you think character A is?
> How much do the other people on (name of show) like character A?

There were four possible responses for each question ranging from very much of the attribute to none of the attribute (e.g. very funny/funny/not very funny/not funny at all; very active/active/not very active/not active at all). Responses were coded from 4 to 1, with the higher number meaning the attribute was maximally applicable. A complete copy of the quesionnaire is in Appendix E.

For the six subgroups to be analyzed, the means and standard deviations on these unidimensional measures were as follows:

[1]Children were not asked to identify the character's sex, which was the ninth hypothesized attribute.

	Males	Females	Third grade	Fifth grade	Seventh grade
Age	$\bar{X}$=2.38 s.d.=.55	$\bar{X}$=2.32 s.d.=.55	$\bar{X}$=2.34 s.d.=.54	$\bar{X}$=2.40 s.d.=.56	$\bar{X}$=2.31 s.d.=.55
Good looking	$\bar{X}$=2.74 s.d.=.44	$\bar{X}$=2.63 s.d.=.66	$\bar{X}$=2.75 s.d.=.45	$\bar{X}$=2.78 s.d.=.56	$\bar{X}$=2.53 s.d.=.63
Strength	$\bar{X}$=2.75 s.d.=.56	$\bar{X}$=2.71 s.d.=.50	$\bar{X}$=2.76 s.d.=.56	$\bar{X}$=2.79 s.d.=.50	$\bar{X}$=2.64 s.d.=.52
Funny	$\bar{X}$=2.80 s.d.=.63	$\bar{X}$=2.80 s.d.=.55	$\bar{X}$=2.89 s.d.=.65	$\bar{X}$=2.86 s.d.=.59	$\bar{X}$=2.65 s.d.=.57
Active	$\bar{X}$=3.17 s.d.=.29	$\bar{X}$=3.07 s.d.=.32	$\bar{X}$=3.15 s.d.=.22	$\bar{X}$=3.20 s.d.=.29	$\bar{X}$=3.00 s.d.=.38
Good	$\bar{X}$=3.23 s.d.=.20	$\bar{X}$=3.16 s.d.=.20	$\bar{X}$=3.25 s.d.=.21	$\bar{X}$=3.28 s.d.=.17	$\bar{X}$=3.07 s.d.=.23
Real	$\bar{X}$=2.91 s.d.=.46	$\bar{X}$=2.87 s.d.=.45	$\bar{X}$=2.98 s.d.=.48	$\bar{X}$=2.92 s.d.=.43	$\bar{X}$=2.77 s.d.=.46
Support	$\bar{X}$=3.53 s.d.=.16	$\bar{X}$=3.58 s.d.=.16	$\bar{X}$=3.56 s.d.=.17	$\bar{X}$=3.57 s.d.=.16	$\bar{X}$=3.54 s.d.=.17

All of the mean ratings exceeded the midpoint of the scale except those for age. The ratings for good looking, strength, funny, and reality generally fell between 2.50 and 3.00. Those attributes perceived to exist most in the 14 TV characters (mean ratings above 3.00) were active, good, and support received from other characters. The mean scores for each character on the eight attributes are in Appendix F.

Media effects variables. Two questions were used to measure the extent to which children would imitate TV characters' behavior. The questions were:

How much do you want to be like character A?

a lot	a little	not very much	not at all

Are there things that character A does that you would like to do?

a lot of things	some things	almost nothing	nothing at all

These questions are self-report measures of anticipated behavior. Responses to these items are valid to the extent that children are able to indicate their desire to be like and "do" like TV characters and to the extent that these reports are actually translated into behaviors.

Both questions are considered operationalizations of the same dependent variable, imitation. Although there are subtle differences in the two items they both deal with reports of behavior modifications associated with exposure to television characters.

These questions were included in the second questionnaire and followed those for the nine attributes. The means and standard deviations for these measures across the 14 TV characters were as follows:

	Males	Females	Third grade	Fifth grade	Seventh grade
Want to be like	$\bar{X}$=2.41 s.d.=.53	$\bar{X}$=2.12 s.d.=.59	$\bar{X}$=2.32 s.d.=.48	$\bar{X}$=2.41 s.d.=.40	$\bar{X}$=2.06 s.d.=.40
Want to do like	$\bar{X}$=2.70 s.d.=.43	$\bar{X}$=2.26 s.d.=.54	$\bar{X}$=2.49 s.d.=.44	$\bar{X}$=2.72 s.d.=.41	$\bar{X}$=2.22 s.d.=.41

Data Analysis

The similarity judgments and unidimensional ratings were collapsed across subjects to give each TV character a value or values for each particular set of data. First, the similarity judgments were input into INDSCAL which resulted in a dimension coordinate for each TV character on n dimensions. Second, the unidimensional ratings were averaged across subjects so that each character was assigned a mean score for a particular attribute. It is the comparison of these values for each TV character that comprised most of the data analysis.

Most of the hypotheses were tested using correlational techniques. To test the extent to which the spatial dimensions can be defined as hypothesized, the dimension coordinates for each character were correlated with the unidimensional means for each character. The multiple correlation of the dimension coordinates with each unidimensional attribute indicated the extent to which each attribute was represented in the multidimensional space. The extent to which the dimensions predicted the media use variables was also tested by correlating dimension coordinates with the mean ratings on the two media effects variables.

Hypotheses concerning subgroup differences in dimension content and structure were tested using the salience scores from the INDSCAL output. These scores were also obtained by collapsing data across subjects; however, the salience scores represent a characteristic of the subgroup and not an attribute of any specific TV character.

It should be noted that for all correlations the sample size for evaluating the significance of the coefficient is 14 (equal to the number of TV characters). By most survey research standards, this sample size would be inadequate. It should be remembered, however, that the values for each character are not based on a single observation. Since all of the values for TV characters were collapsed across subjects, the minimum number of ratings used to comprise the value is never less than the size of the smallest subgroup (n=26 for seventh grade males) and is usually considerably larger. Reported significance levels should be regarded as conservative estimates.

CHAPTER III

RESULTS

The results will be presented in four sections that generally conform to the format in which the hypotheses were originally discussed. The sections are on 1) the dimensionality of the multidimensional space; 2) the content of the dimensions; 3) subgroup differences in dimensions; and 4) the relationship between the dimensions and children's use of TV character's behavior.

Dimensionality of INDSCAL Solutions

Although nine separate attributes were hypothesized as potential dimensions in the multidimensional solution, the exact number of dimensions that would emerge was not specified. There was no theory or data which suggested how many dimensions children would use to differentiate TV characters.

Age differences in the relative number of dimensions that would emerge were hypothesized. The specific hypothesis was:

> H9: Older children will use more dimensions to differentiate television characters than younger children.

The number of dimensions that should be retained for further analysis was determined by comparing the proportion of variance accounted for in the original similarity data by adding more dimensions in the INDSCAL solution. While the overall proportion of variance will always increase with the addition of dimensions, higher dimensions may provide only a negligible improvement in the goodness of fit measure.

The decision to stop adding dimensions is probably just as much a subjective judgment as a statistical one. A three dimensional solution, for example, may add only 3% additional explained variance, but the dimension may be readily interpretable or it may be important in explaining media effects.

Table 1 shows the amount of variance accounted for by one, two, three, four and five dimension solutions. Figure 3 represents a graph of the change in explained variance for the different solutions.

For the total group and all three age groups, the addition of the fifth dimension adds a negligible amount of variance. More than two digits would be needed to show the increase in the overall correlation. This eliminates from consideration anything greater than a four dimensional structure.

A two dimensional solution for the entire group accounts for 74% of the variance in the original data. A third dimension increases the percentage to 82% and a fourth dimension adds another 5% resulting in a total of 87%. While the third and fourth dimension do not add a substantial amount of explained variance, they will be retained at this point in the analysis to determine if they are either identifiable or predictive of the media effects variables.

The table also shows that no substantial differences occur among the dimensionality of the three age group spaces. While the amount of variance explained by the same dimensional solution increases slightly with age, (probably because the more reliable variance is in the older groups), the percentage change across solutions is almost the same. Addition of dimension 3 and 4 for the third

Table 1

Percentage of Variance Accounted for by INDSCAL Analysis with Different Dimensional Solutions (Total Group and Third, Fifth, and Seventh Grades)[a]

	Number of Dimensions in Solution									
	1		2		3		4		5	
	R	R^2	R	R^2	R	R^2	R	R^2	R	R^2
Third Grade	.68	.46	.83	.69	.87	.76	.91	.83	.91	.83
Fifth Grade	.77	.59	.86	.73	.91	.83	.94	.88	.94	.89
Seventh Grade	.84	.70	.89	.80	.92	.86	.95	.90	.95	.90
Total Group	.77	.59	.86	.74	.90	.82	.93	.87	.93	.87

[a]The correlational value for a subgroup is between a matrix of scalar products derived from the subgroup's similarity matrix and a matrix of scalar products derived from the group's private space.

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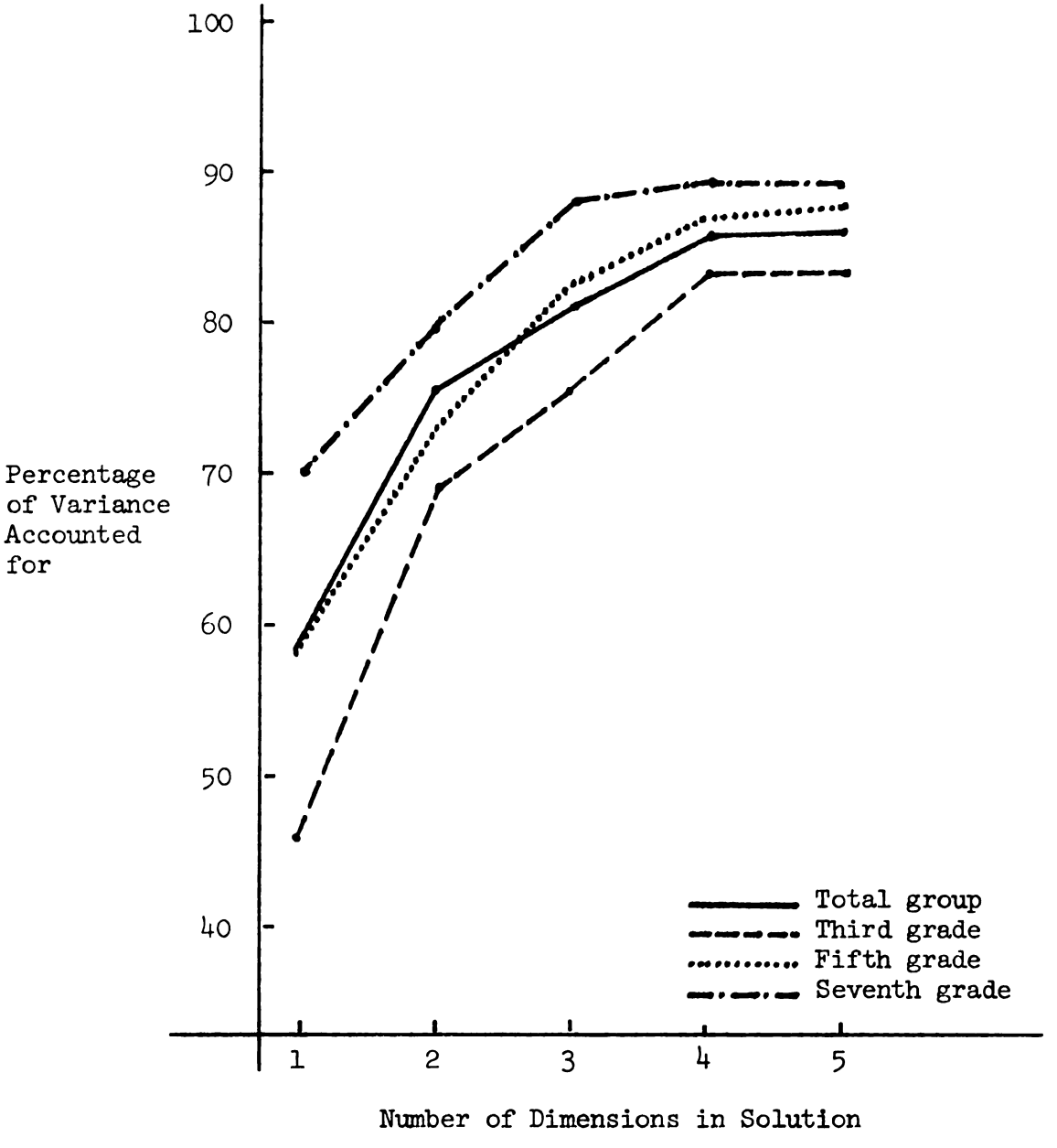

Figure 3

Percentage of Variance Accounted for by INDSCAL Analysis With Different Dimensional Solutions[a]

[a]The correlational value for a subgroup is between a matrix of scalar products derived from the subgroup's similarity matrix and a matrix of scalar products derived from the group's private space.

grade increased the overall correlation by .04 for each addition. For the fifth grade the increases were .05 and .03; and for the seventh grade .03 for each addition. Hypothesis nine is, therefore, not supported.

Dimension Content

This section will present analyses that attempted to describe the four dimensions that were retained. Essentially, these analyses relate children's perception of TV characters' qualities along unidimensional attributes to spatial configurations of the same group of characters. Nine attributes were hypothesized as reasonable expectations of the content of these dimensions (sex, age, attractiveness, strength, reality, goodness, support from other characters, and activity).

Figures 4 and 5 show the fourteen TV characters plotted in four dimensions. Figure 4 represents dimensions one and two and Figure 5 represents dimensions three and four. All possible two dimensional comparisons in the four dimensional solution are in Appendix G. The actual coordinate values for each character on each of the four dimensions are tabled in Appendix H.

The INDSCAL program does not compute totally orthogonal dimensions. The dimensions in Figures 4 and 5 are drawn as orthogonal for clarity of presentation. Correlations among the four INDSCAL dimensions are shown in Table 2.

In many cases, the interpretation of a single dimension will involve more than one unidimensional attribute. If more than one attribute has a high relationship with a single INDSCAL dimension,

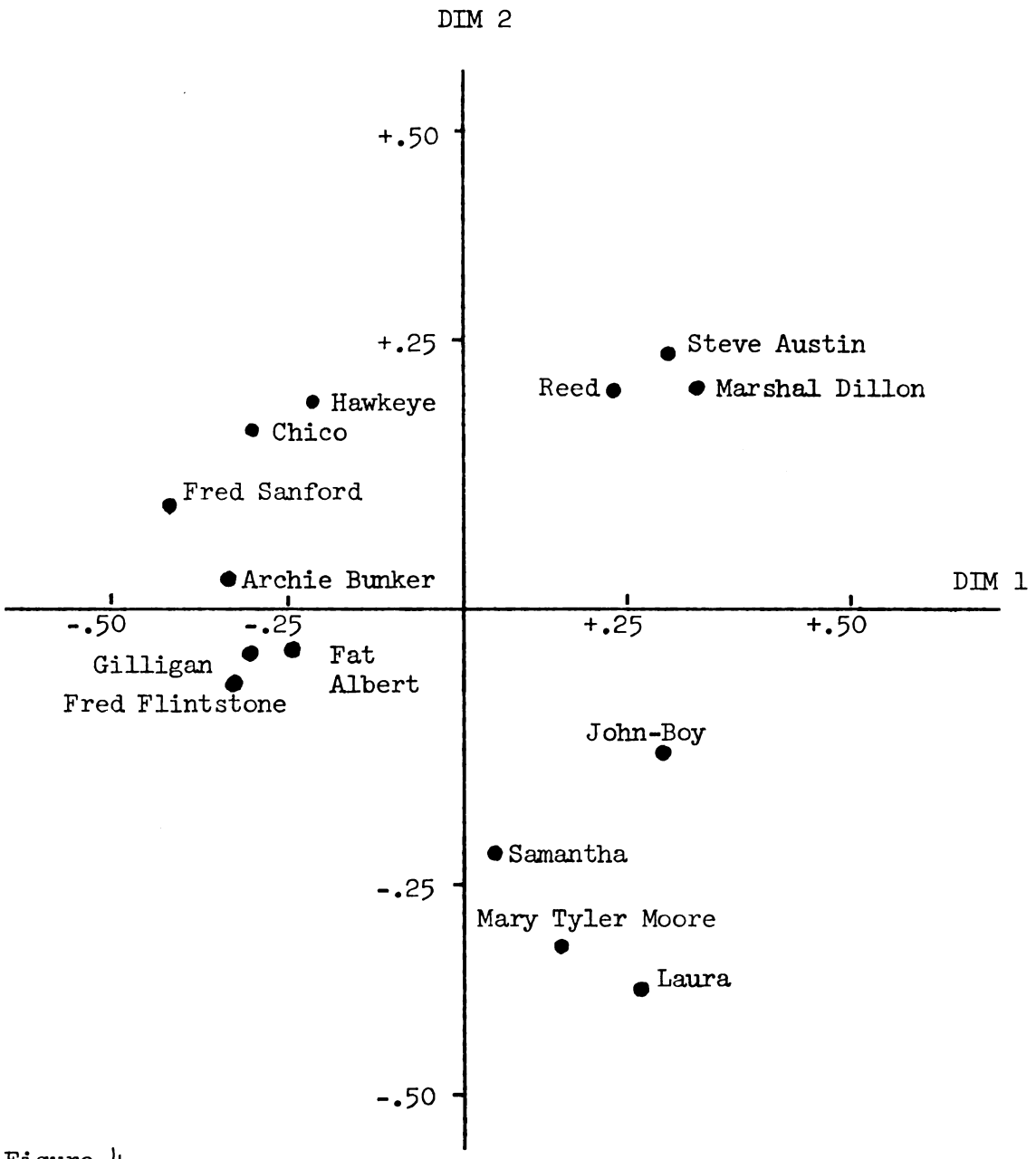

Figure 4

Dimensions 1 and 2 of the Four Dimensional Group Concept Space From an INDSCAL Analysis of Data on Perceived Similarities Among Fourteen Television Characters[a]

[a] The INDSCAL program does not compute totally orthogonal dimensions. The dimensions in Figure 2 are drawn as orthogonal for clarity of presentation. The correlation between dimension 1 and dimension 2 is .02.

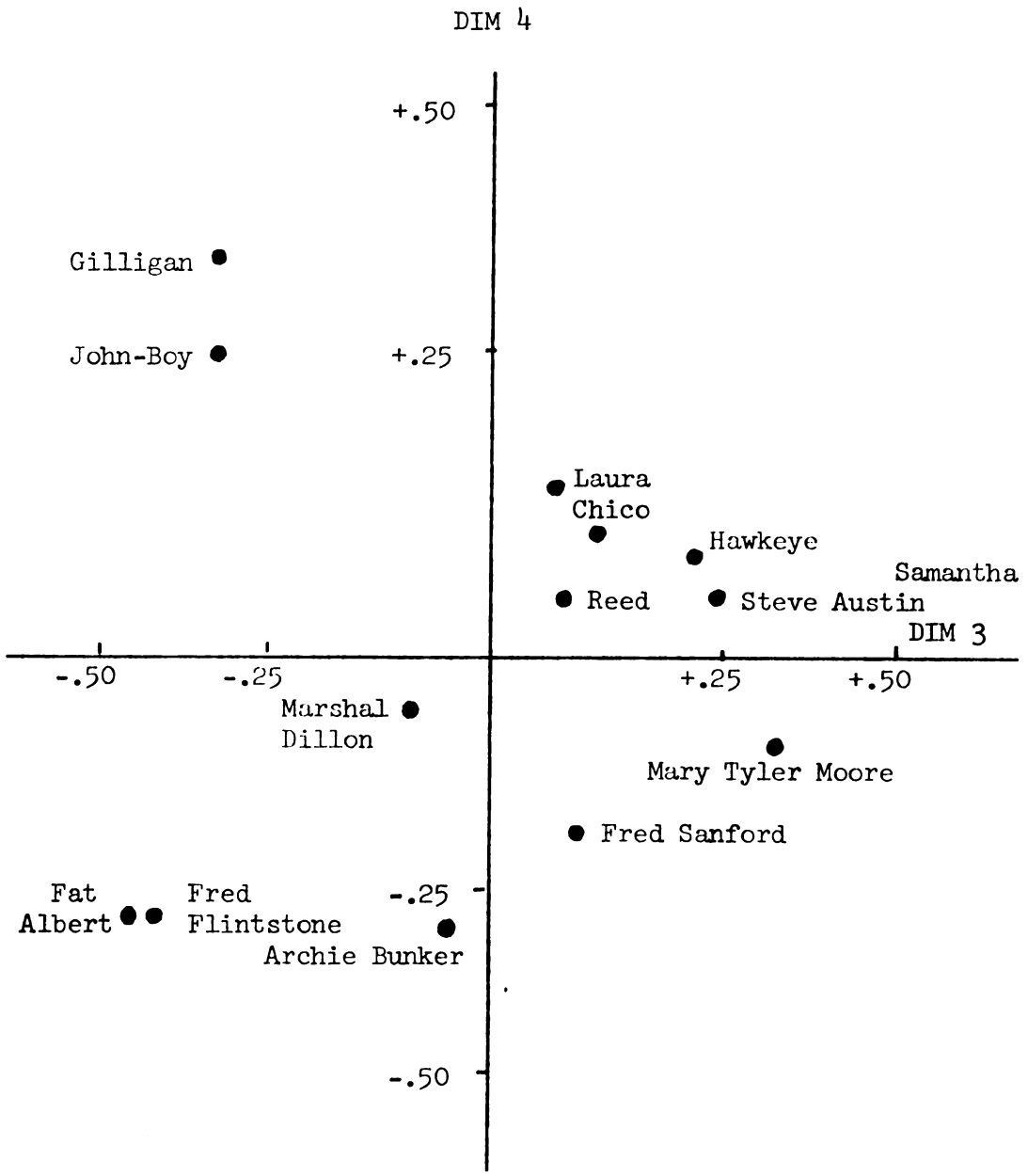

Figure 5

Dimension 3 and 4 of the Four Dimensional Group Concept Space From an INDSCAL Analysis of Data on Perceived Similarities Among Fourteen Television Characters[a]

[a]The INDSCAL program does not compute totally orthogonal dimensions. The dimensions in Figure 3 are drawn as orthogonal for clarity of presentation. The correlation between dimension 3 and dimension 4 is .24.

Table 2

Zero Order Correlations Among Four INDSCAL Dimensions[a]

	DIM 1	DIM 2	DIM 3	DIM 4
DIM 1	-			
DIM 2	.02	-		
DIM 3	-.30	.09	-	
DIM 4	-.41	-.26	.24	-

[a]These correlations are based on the coordinate values for fourteen TV characters on each of four dimensions. The n for the correlations is 14, the number of TV characters.

the attribute should be correlated in a magnitude and direction that is consistent with the regression analysis. Table 3 shows the zero order correlations among the nine unidimensional attributes for the entire sample. Similar matrices for each grade and sex are in Appendix I.

Description of the four dimensions was guided by results from multiple regression analysis. These results are presented in Table 4. The columns in the table represent zero order correlations and standardized regression weights for predicting mean ratings of fourteen TV characters on the nine hypothesized unidimensional scales. The multiple correlations in the righthand column show how well the mean ratings can be predicted using all four of the INDSCAL dimensions as independent variables.

The correlations and regression analysis are based on an N of 14, the number of TV characters. Each character has a coordinate value (based on the INDSCAL analysis) and a value on the unidimensional attributes (based on the mean rating given the character by subjects). These two numbers are the X and Y values in the correlations.

Geometrically, the regression coefficients represent direction cosines between a vector (corresponding to the unidimensional measure) in the four dimensional space. Projections of TV characters on the vector correlate maximally with mean ratings of the characters on the unidimensional scales.

Because the number of variables in the multiple regression equations (5) approaches the sample size used to compute the correlations

Table 3

Zero Order Correlations For Entire Sample Among Nine Unidimensional Ratings of Fourteen Television Characters[a]

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.42	-							
3	Good looking	-.35	.84**	-						
4	Strength	-.50	.56*	.45	-					
5	Reality	-.19	.21	.26	-.00	-				
6	Good	-.41	.89**	.92**	.46	.46	-			
7	Age	.15	-.30	-.25	.12	-.04	-.34	-		
8	Support	-.74*	.36	.44	.32	.29	.56*	-.60*	-	
9	Sex (of character)	-.18	-.04	-.35	-.39	.00	.19	-.38	.45	-

*p<.05
**p<.001

[a]These correlations are based on the mean rating of each of fourteen TV characters on nine attributes. The n for the correlations is therefore fourteen, the number of TV characters. The mean value of each attribute for each character is, however, collapsed across subjects. The attribute value for each character is then based on an n of 202.

Table 4

Zero Order Correlations and Standardized Regression Weights For Predicting Mean Ratings on Unidimensional Scales from Four INDSCAL Dimensions (Total Group)[a]

	DIM 1		DIM 2		DIM 3		DIM 4				(corrected for shrinkage)
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Funny	-.92**	-1.02**	-.16	-.18	-.14	+.17	-.21	+.11	.96**	.92	.89
Active	+.54*	+.23	+.29	+.46*	+.43	+.15	+.66*	+.65*	.87*	.77	.67
Good looking	+.53*	+.19	+.17	+.21	+.79**	+.62**	+.54*	+.37	.91**	.83	.76
Strength	+.38	+.40*	+.82**	+.85**	+.19	-.01	-.03	+.03	.92**	.84	.76
Reality	+.25	+.08	+.14	+.23	+.23	+.09	+.35	+.36	.45	.20	-.15
Good	+.60*	+.25	+.20	+.32*	+.64*	+.39*	+.68*	+.56*	.92**	.86	.80
Age	-.36	-.24	+.46	+.33	+.02	+.15	-.52	-.37	.66	.44	.20
Support	+.84**	+.84*	-.09	-.06	+.24	-.01	+.37	+.01	.84*	.71	.58
Sex	+.40	+.33*	-.62*	-.77**	+.57*	+.63**	+.13	-.36*	.96**	.93	.90

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value on the unidimensional attributes (based on the mean rating given the character by the entire sample of children). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

(14), all multiple correlations were corrected for shrinkage (McNemar, 1969). This correction gives an unbiased estimate of the population coefficient.

The high multiple correlations indicate that most of the attributes can be accurately predicted from the four INDSCAL dimensions. Five of the multiple correlations (not corrected for shrinkage) were greater than .90 ($p<.001$); two were greater than .80 ($p<.05$); and two were not significant.

Based on the regression analysis, the four dimensions were labeled as follows: dimension 1, unsupported humor; dimension 2, masculine strength; dimension 3, feminine attractiveness; and dimension 4, activity.

The regression weights associated with dimension 1 are very high for funny (-1.02, $p<.001$) and support (.84, $p<.05$). The opposite signs indicate the attributes are inversely related ($r=-.74$). Refering to the plot in Figure 4, highly funny characters are represented by Fred Sanford, Archie Bunker, Fred Flintstone and Gilligan. Highly supported characters are Steve Austin, Marshal Dillon, John-Boy Walton, and Laura.

Two other attributes, strength and sex, had significant regression weights associated with dimension 1 (.40 and .33, $p<.05$). Strength was not included because the weight was low in comparison to funny and support, and because it was more clearly related to another dimension.

Although the weight for sex is relatively low (.33, $p<.05$), sex will be interpreted as part of dimension 1. Looking across the

regression weights for sex on each dimension, sex is not obviously related to any one dimension, but is related to them all. Figure 4 confirms this relation for dimension 1. All three females are on the not funny, highly supported section of the dimension. The correlations between sex and funny, and sex and support are -.18 and .45, respectively.

Dimension 2 was interpreted as masculine strength. The regression weight for strength on dimension 2 was high and positive (.85, $p<.001$) and for sex the weight was high and negative (-.77, $p<.001$; male coded as 1, female coded as 2). Characters arrayed high on this dimension included Steve Austin, Reed, Hawkeye, and Marshal Dillon. The three females (Samantha, Mary Tyler Moore, and Laura) were lowest on the masculine strength dimension. The correlation between strength and sex was -.50. Two other attributes that weighted heavily on dimension 2 were active (.46, $p<.05$) and good (.32, $p<.05$). Although the attribute "active" weights higher on another dimension, masculine strength should be considered as being an active attribute. The correlation between active and strength is .56 ($p<.05$).

Similar to the attribute "sex," "good" is related to all of the dimensions. Just as all dimensions are associated with one of the sexes, all dimensions also differentiate TV characters according to perceived goodness. The correlations between good and strength, and good and sex are .46 and -.39 respectively. The strong males rate highest on dimension 2.

Dimension 3 was interpreted as feminine attractiveness. The regression weights for good looking and sex on dimension 3 were the highest of all attributes (.62 and .63 respectively, $p<.001$). Good looking and sex were correlated .35. Dimension 3 also predicted the character ratings for good (Beta=.39), with the good looking females being rated as better than less attractive male counterparts.

The two older females, Samantha and Mary Tyler Moore, were rated highest on this dimension, followed by attractive males such as Steve Austin and Hawkeye. At the other end of the dimension were the cartoon characters, Fred Flintstone and Fat Albert, and John-boy and Gilligan.

Dimension 4 was interpreted as an activity dimension. The regression weight for dimension 4 as a predictor of active was .65 ($p<.05$). Sex and good were also related to dimension 4. Their weights were .56 ($p<.05$) and -.36 ($p<.05$). The more active characters were rated higher on the good scale ($r=.89$), although sex was not correlated at all with active ($r=-.04$). Characters with high values on dimension 4 included Gilligan, John-Boy and Laura. Less active characters were Archie Bunker, Fred Sanford and the two cartoon characters.

Two of the unidimensional attributes were not significantly represented by any dimension in the multidimensional space (Table 3). These are the perceived reality of the TV characters ($R=.45$; n.s.) and the perceived age of the characters ($R=.66$; n.s.). The hypotheses regarding children's use of these dimensions to differentiate television characters (Hypotheses two and five) are,

therefore, not supported to the extent that the other attributes were.

In summary, the four INDSCAL dimensions as defined using regression analysis were:

Dimension 1 - unsupported humor
Dimension 2 - masculine strength
Dimension 3 - feminine attractiveness
Dimension 4 - activity

The first and fourth are descriptive of TV character's behavior, and the second and third describe physical attributes.

Of the nine hypotheses related to the emergence of these attributes, two were not significantly predicted by the dimensions -- age and perceived reality. The remaining hypotheses were accepted because of the presence of the attributes in the multidimensional space. These included three attributes involving physical description: sex (H1); physical strength (H3); and physical attractiveness (H4); and four attributes of character's behavior: funny (H6); good (H7); support (H8); and activity (a post hoc hypothesis derived during instrument development).

One further note should be made concerning the acceptance of these hypotheses. No attribute was predicted to simultaneously occur with other attributes. The expectation was that they would be independently operative.

Based on the regression analysis in Table 4, however, two types of results emerged. For five of the attributes (funny, active, good looking, strength and support), the regression analysis indicated they were highly related to only one dimension. For the other two attributes (sex and good), the same analysis showed that they were

related to all of the dimensions. While the hypotheses on sex and good are accepted, their location in the space was not explained by only one dimension.

Subgroup Differences in Dimension Content

Grade and sex differences in the content of the four INDSCAL dimensions will now be discussed. While no hypotheses were made concerning sex differences, one hypothesis was made about developmental differences in the content of perceptual dimensions. Evidence relating to this hypothesis will be discussed first, followed by other grade differences and sex differences.

The specific hypothesis on developmental content differences was:

> H10: Younger children will be more reliant on perceptual dimensions describing physical properties of TV characters (i.e. sex, age, physical strength and physical attractiveness) than older children who will rely more on dimensions describing TV character's behavior (i.e. perceived reality, humor, goodness, and support received from other characters).

The evidence for this hypothesis comes from correlating the mean ratings of the TV characters on the unidimensional attributes calculated separately for each age group with the dimensional coordinates for the same characters. This analysis was the same as that for the total group (Table 4) except that the attribute means used in the correlations are based only on subjects from one grade level.

For each of the four dimensions, the regression weights among the three grades were compared. The weights were interpreted as

indicating differences in the amount of variance in attributes at each grade level that could be explained by a single dimension.

For hypothesis 10 to be supported, third graders should have higher regression coefficients on the two dimensions which describe physical attributes. These are dimension 2, which was interpreted as strength, and dimension 3, which was attractiveness. Older children should have higher weights for the behavioral dimensions 1 and 4. Dimension one was unsupported humor and dimension 4 was activity.

Table 5 shows the results obtained by regressing the four dimensions on each attribute separately for the three grades. For dimension 1, unsupported humor, the regression weights increase in absolute value with age for both the attributes funny and support. The increase in regression weights for funny was from -.96 to -1.03; for support, the weights increased from .71 to .85. Since dimension 1 is a behavioral dimension, these differences are supportive of hypothesis 10.

Dimension 2 was interpreted as masculine strength. The weights for dimension 2 regressed on strength decrease with age from .87 to .80. This indicates that dimension 2 is less predictive of strength for older children, which is also consistent with hypothesis 10. No grade differences for sex are presented since children did not rate characters on this variable. All subgroup regression analyses with sex as a dependent variable would be the same as the analysis for the entire sample.

There appear to be no grade differences in the regression weights for dimension 3. The dimension was described as physical

Table 5

Zero Order Correlations and Standardized Regression Weights for Predicting Mean Ratings on Unidimensional Attributes from Four INDSCAL Dimensions (Fifth Grade, Third Grade, Seventh Grade)[a]

		Unsupported Humor DIM 1		Masculine Strength DIM 2		Feminine Attractiveness DIM 3		Activity DIM 4				(corrected for shrinkage)
		r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Funny	3rd	-.93**	-.96**	-.16	-.18	-.27	+.04	-.31	+.02	.95**	.90	.86
	5th	-.89**	-.99**	-.23	-.25*	-.13	+.18	-.20	+.09	.95**	.90	.96
	7th	-.85**	-1.03**	-.07	-.07	-.00	+.28	-.12	+.21	.93**	.86	.80
Active	3rd	+.31	+.19	+.52	+.60*	+.25	+.05	+.24	+.31	.68	.46	.23
	5th	+.53*	+.19	+.29	+.47*	+.46	+.18	+.71*	+.71**	.91**	.83	.76
	7th	+.58	+.24	+.14	+.33*	+.43	+.15	+.76*	+.71**	.89*	.79	.70
Good looking	3rd	+.47	+.18	+.30	+.32	+.75*	+.60*	+.40	+.26	.86*	.74	.62
	5th	+.52	+.15	+.05	+.11	+.76*	+.60*	+.60*	+.42*	.89*	.80	.71
	7th	+.55*	+.20	+.17	+.22	+.80**	+.62**	+.56*	+.38*	.93**	.86	.80
Strength	3rd	+.31	+.30	+.84**	+.87**	+.21	+.01	-.03	+.07	.91**	.83	.76
	5th	+.35	+.45	+.79**	+.81**	+.04	-.16	-.12	-.05	.90*	.81	.71
	5th	+.43	+.41*	+.78**	+.80**	+.30	+.08	+.03	+.06	.91**	.83	.76
Reality	3rd	+.22	+.09	+.18	+.26	+.15	+.02	+.28	+.30	.40	.16	-.20
	5th	+.25	+.06	+.13	+.23	+.24	+.09	+.39	+.40	.48	.23	-.10
	7th	+.27	+.06	+.08	+.17	+.29	+.16	+.40	+.39	.48	.23	-.10
Good	3rd	+.53	+.24	+.36	+.44*	+.62*	+.40*	+.48	+.40	.86*	.74	.62
	5th	+.55*	+.26	+.02	+.15	+.47	+.24	+.64*	-.51*	.77*	.60	.42
	7th	+.56*	+.18	+.16	+.30*	+.63*	+.39*	+.71*	-.62	.92**	.84	.76
Age	3rd	-.37	-.24	+.51	+.37	+.04	+.18	-.57*	-.42	.73	.53	.32
	5th	-.35	-.24	+.49	+.39	-.00	+.11	-.50	-.32	.67	.44	.20
	7th	-.35	-.24	+.38	+.26	+.02	+.16	-.49	-.35	.60	.36	.08
Support	3rd	+.62	+.71*	-.04	-.02	-.00	-.20	+.18	-.06	.66	.43	.18
	5th	+.83**	+.75*	-.02	+.08	+.19	-.12	+.56	+.30	.88*	.77	.67
	7th	+.84**	+.85**	-.14	-.19	+.41	+.21	+.25	-.19	.88*	.78	.68

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value on the unidimensional attributes (based on the mean rating given the character by each grade). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

attractiveness and the weights for dimension 3 regressed on the attribute good looking are .60 for third and fifth graders and .62 for the seventh grade. The lack of grade differences on dimension 3 is not supportive of hypothesis 10 which predicted physical dimensions to be more operative for younger children.

Dimension 4, activity, was the second dimension descriptive of character's behavior. While the regression weights for dimension 4 were identical for fifth and seventh graders (.71), the weight for the third grade was smaller and insignificant (.31). In fact, the attribute "activity" is better predicted by dimension 2 for the youngest children. Dimension 4 is, therefore, also supportive of hypothesis 10. Activity is a behavioral dimension and is more obviously present in the spatial configuration of the older children.

The results for at least three of the dimensions (1, 2, and 4) support the hypothesis that younger children will use physical dimensions and older children will rely more on behavioral dimensions.

The salience scores for each subgroup provided by the INDSCAL analysis offer another method for testing this hypothesis. The salience scores represent the use or dominance of each dimension for all subgroups.[1] If the dimensions are used differently by each grade level, this should be reflected in the salience scores.

Table 6 shows the salience scores for three grades on the four INDSCAL dimensions. The changes in the scores generally conform to the results of the regression analysis. For the first behavioral

[1]The salience scores are approximately equal to the proportion of variance accounted for in the similarity matrix for each subgroup.

Table 6

Salience Scores for Three Age Groups From an INDSCAL Analysis of Data on Similarities Among Fourteen Television Characters

	Unsupported Humor	Masculine Strength	Feminine Attractiveness	Activity
	DIM 1	DIM 2	DIM 3	DIM 4
Total Group (n=202)	.596	.372	.340	.326
Third Grade (n=67)	.436	.456	.400	.387
Fifth Grade (n=66)	.692	.372	.325	.320
Seventh Grade (n=69)	.724	.289	.295	.272

dimension (1), the salience scores increase with age (from .436 to .724) demonstrating dimensions 1 is more important in the space for older children.

The reverse pattern is present for dimension 2. Masculine strength is more important for younger children (.456) than older children (.289).

Differences in salience scores for dimension 3, feminine attractiveness, show grade differences in use of the dimension that were not indicated by the regression analysis. The salience scores, unlike the regression weights, decrease with age (from .400 to .295) which is supportive of hypothesis 10.

The scores for dimension 4, activity, change about the same amount as those for dimension 3 (.387 to .272). These changes, however, are not predicted by hypothesis 10 and run counter to the regression results which indicated this dimension predicted activity better for older children.

The salience scores for each grade are plotted in Figure 4. The coordinates in these plots represent the salience values. These plots graphically show that as grade increases, dimension 1 becomes more important and dimensions 2, 3, and 4 are less important.

Despite some inconsistent comparisons between the two methods, there is good support for accepting hypothesis 10. For the two dimensions which account for the most variance in the subgroup spaces (unsupported humor and masculine strength), grade differences most obviously support differential emphasis on behavioral vs. physical attributes.

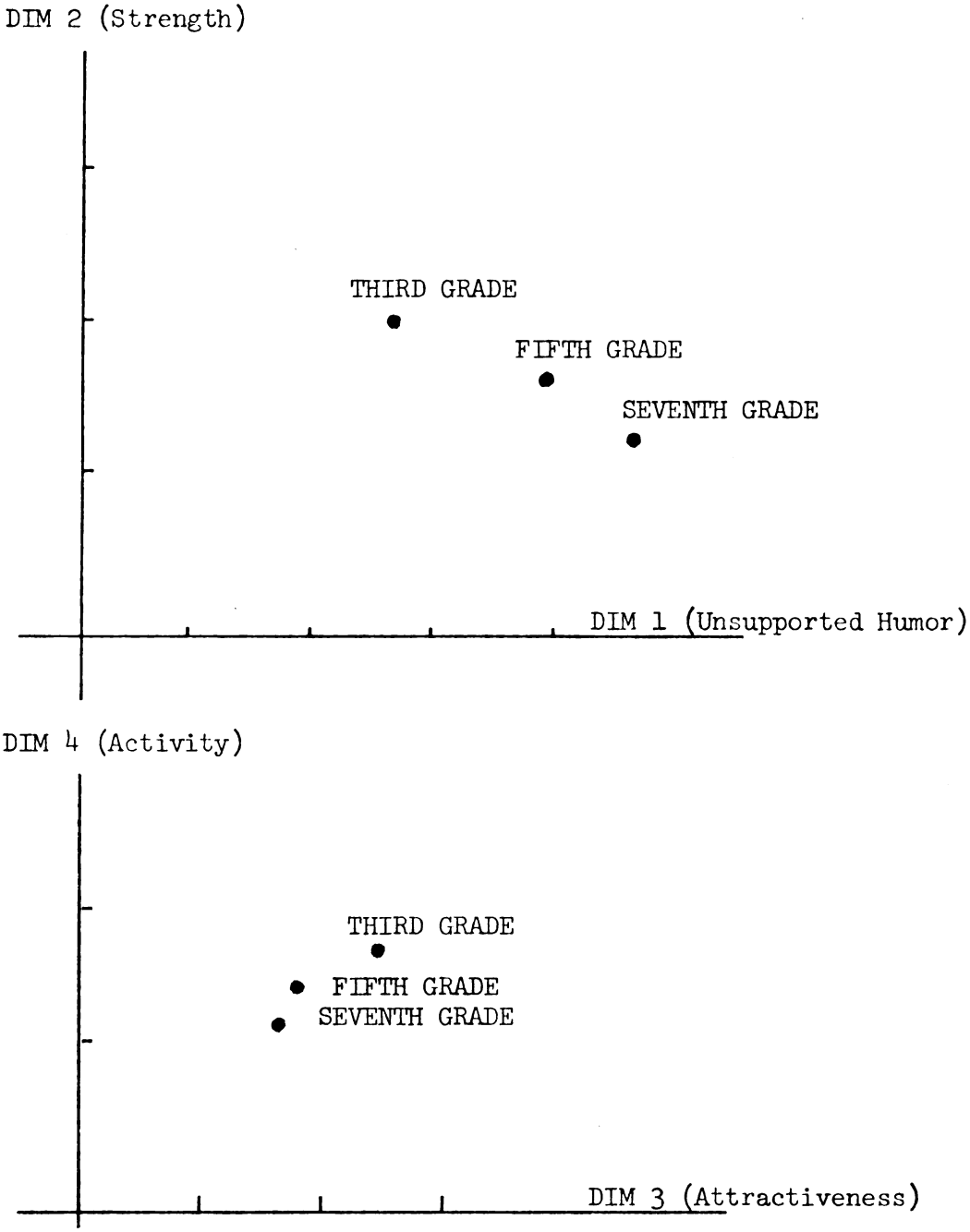

Figure 6

Subgroup Spaces for Three Grades on Four INDSCAL Dimensions[a]

[a]The coordinate values for the three grades on each dimension are equal to the salience score on that dimension.

Furthermore, the two methods of analysis support the hypothesis in different ways. The regression analysis examined grade differences in values associated with only the individual attributes that were best predicted by each dimension. The analysis of salience scores, however, looked at entire dimensions irrespective of the unidimensional attributes which loaded on the dimension.

Actually, large grade differences in the regression analysis would make the salience scores uninterpretable because the latter are computed by relating each grade to the overall group. If the dimensions were conceptualized differently for each grade, the salience scores would be meaningless because they refer to the same dimension across grades, regardless of differences in content. While there were grade differences in the prediction of attributes from the dimensions, the separate regression analyses did not suggest that dimension content changed with age.

Two other results from Table 5 are important. While age and perceived reality were not significantly predicted for any age group, the multiple correlation for age almost reached significance for the third graders (.73, $p<.10$).

Secondly, while age differences in the description and importance of some dimensions did occur, the spatial configurations for the three grades were generally very similar. Table 7 shows the results of spatial comparisons using canonical correlation

analysis.[1] For all possible comparisons of the separate four dimensional spaces, four significant canonical variates were obtained.

Sex Differences in Dimension Content

Although no specific hypotheses were made about sex differences in dimension content, reasons were given why some male/female discrepancies could be expected. The most general comment on the spaces for the two sexes, however, is that despite subtle differences, the dimensional structures are very similar. A canonical correlation analysis similar to the one between grade levels resulted in four significant canonical correlations (.99, .98, .94, .87; $p<.001$ for all four correlations) between the four-dimensional spaces for males and females.

Sex differences in dimension content were found for: 1) prediction of the attributes active and good, and 2) the magnitude of regression weights for masculine strength and feminine attractiveness. Results for the regression analysis by sex are in Table 8.

While the attribute "active" was predicted by dimension 4 for both males and females, the regression weight for dimension 2 was even greater (.71, $p<.001$), but only for males. The regression weight for females was only .20 (n.s.).

[1]Canonical correlation analysis (Cooley and Lohnes, 1962) is a technique used to test the relationship between two sets of variables (in this case two sets of coordinate values derived from two different grades). A linear combination of variables is found in each set of variables that maximizes the correlation between the created factors or canonical variates. A new linear combination is then found which best accounts for the residual relationship between the two sets. The analysis finds as many canonical variates as there are variables in the smaller set of the two (Fink and Walker, 1975).

Table 7

Canonical Correlations of Four INDSCAL Dimensions For Three Separate Age Levels (Third Grade, Fifth Grade, and Seventh Grade)[a]

	Canonical Variate Number	Canonical Correlation	χ^2	Degrees of Freedom	$p \leq$
Third grade	1	.985	88.03	16	.001
with	2	.972	54.28	9	.001
Fifth grade	3	.916	26.60	4	.001
	4	.787	9.18	1	.002
Third grade	1	.991	92.14	16	.001
with	2	.963	53.04	9	.001
Seventh grade	3	.907	27.94	4	.001
	4	.837	11.45	1	.001
Fifth grade	1	.991	108.10	16	.001
with	2	.985	69.65	9	.001
Seventh grade	3	.957	35.84	4	.001
	4	.851	12.28	1	.001

[a] Separate INDSCAL solutions were obtained for each subgroup. The values in the canonical analysis are the coordinate values for each of 14 TV characters calculated separately for each grade level.

Table 8

Zero Order Correlations and Standardized Regression Weights for Predicting Mean Ratings on Unidimensional Attributes From Four INDSCAL Dimensions (Males and Females)[a]

	Unsup. Humor DIM 1		Strength DIM 2		Attractiveness DIM 3		Activity DIM 4				(corrected for shrinkage)
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Funny											
male	-.93*	-1.01**	-.11	-.12	-.23	+.06	-.23	+.13	.96**	.92	.89
female	-.88**	-1.02**	-.20	-.23*	-.02	+.29*	-.18	+.09	.96**	.92	.89
Active											
male	+.49	+.30	+.52*	+.71**	+.17	-.14	+.51	+.61*	.90**	.82	.75
female	+.52	+.15	+.06	+.20	+.58*	+.35	+.72*	+.62*	.86*	.75	
Good looking											
male	+.48	+.17	+.36	+.44*	+.67*	+.46*	+.49	+.42*	.87*	.77	.67
female	+.54*	+.19	+.04	+.07	+.83**	+.68**	+.55*	+.33*	.92**	.86	.80
Strength											
male	+.27	+.33*	+.86**	+.91**	+.01	-.19	-.09	+.05	.93**	.87	.81
female	+.47	+.44*	+.74*	+.74**	+.37	+.16	+.03	+.00	.90**	.82	.75
Reality											
male	+.24	+.10	+.25	+.35	+.13	-.02	+.31	+.37	.47	.22	-.12
female	+.26	+.05	+.03	+.11	+.32	+.20	+.40	+.35	.47	.22	-.12
Good											
male	+.53*	+.29	+.41	+.56*	+.36	+.07	+.55*	+.57*	.86*	.74	.62
female	+.58*	+.17	-.01	+.06	+.79**	+.60**	+.70*	+.49**	.96**	.93	.90
Age											
male	-.34	-.22	+.46	+.34	+.00	+.13	-.52	-.37	.66	.44	.20
female	-.37	-.26	+.45	+.32	+.03	+.18	-.52	-.36	.66	.44	.20
Support											
male	+.84**	+.94**	+.07	+.13	+.01	-.29	+.28	+.00	.89*	.80	.71
female	+.75*	+.68*	-.21	-.22	+.40	+.20	+.38	-.00	.80*	.65	.50

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value on the unidimensional attributes (based on the mean rating given the character by each sex). These two numbers are the X and Y values in the correlation.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

This difference shows that for boys activity was part of the "masculine strength" dimension. The correlations between the unidimensional attributes calculated separately for each sex also confirm this finding. For males, $r=.73$ ($p<.05$), and for females, $r=.43$ (n.s.).

In the total group analysis, the attribute good was related to three of the four dimensions. The male/female breakdown, however, shows that good is predicted best by dimensions 2 and 4 for the males and dimension 3 and 4 for females (Table 8). Furthermore, for the two dimensions which weight differently on good, one sex weights heavily on the dimension and the other not at all. For dimension 2 the regression coefficient for good is .56 ($p<.05$) for males and .06 (n.s.) for females. The pattern for dimension 3 is reversed. The weight for females is .60 ($p<.001$) and for males .07 (n.s.). This indicates that good is a part of masculine strength for males and a part of feminine attractiveness for females.

For the remaining attributes, significant weights were found simultaneously for males and females, although the magnitude of the weights was occasionally different. The weight for predicting strength from dimension 2 was greater for males (.91, $p<.001$) than for females (.71, $p<.001$). The weight for dimension 3 on good looking was greater for females (.68, $p<.001$) than for males (.46, $p<.05$). Finally, dimension 1 predicted support better for males (.94, $p<.001$) than for females (.68, $p<.05$).

In summary, the following results were found in the subgroup analyses:

1) Older children tended to use dimensions which described TV character's behavior more than young children who used dimensions descriptive of character's physical attributes.

2) Activity was part of dimension 2 for males but not for females.

3) Males weighted support and strength more than females, and females weighted attractiveness more than males. These differences, however, were for weights that were significant for both sexes.

4) Good was related to masculine strength for males and to attractiveness for females.

5) Despite the differences cited above, the spatial configurations for the subgroups were generally very similar as determined by canonical correlation analysis.

Perceptual Dimensions as Predictors of Media Effects

This final section will show how well the four INDSCAL dimensions were able to predict whether children wanted to be like or do like characters on television. The analyses are similar to those previously discussed. Each of the two dependent measures was separately predicted using multiple regression.

There are two specific versions of hypothesis 11 being tested:

H11a: The dimensions children use to distinguish television characters will be related to how much children want to be like TV characters.

H11b: The dimensions children use to distinguish television characters will be related to how much children want to do things that TV characters do.

No specific hypotheses were made about which dimensions would be the best predictors or about subgroup differences in the predictions.

Table 9

Zero Order Correlations and Standardized Regression Weights for Predicting Mean Ratings On Two Media Effects Variables From Four INDSCAL Dimensions (Total Group)[a]

	Unsupported Humor DIM 1		Masculine Strength DIM 2		Feminine Attractiveness DIM 3		Activity DIM 4				
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	(corrected for shrinkage) R^{2b}
Want to be like	-.50	-.16	+.32	+.38*	+.75*	+.56**	+.51	+.41*	.91**	.84	.76
Want to do like	-.38	-.03	-.03	+.05	+.61*	+.47	+.61*	+.49	.78*	.60	.42

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value for each of the media effects variables (based on the mean rating given the character by the total sample). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley Inc., 1969, pp. 205-206.

The most profound differences were between the sexes (Table 10). While the multiple correlations for predicting "want to be like" for males and females were almost the same (.90 for males, $p<.001$; .91 for females, $p<.001$), they are dependent on entirely different dimensions. For the males, "want to be like" is predicted by dimension 2, masculine strength (Beta=.89, $p<.001$), and dimension 4, activity (Beta=.56, $p<.05$). Dimension 3, attractiveness, was the only significant predictor for the females (Beta=.74, $p<.001$).

The multiple correlations for the variable "want to do like" were not equally as high for males and females (.74 for males, $p<.09$; .89 for females, $p<.05$); however, the same dimensions were operative by sex as for the first dependent measure. Strength (Beta=.59, $p<.05$) and activity (Beta=.65, $p<.05$) predicted "want to be like" for males, and attractiveness (Beta=.62, $p<.05$) predicted for the females.

Grade differences in predicting "want to be like" were less striking (Table 11). Three changes occurred from third to fifth grades. First, the overall multiple correlation increased from .86 to .88 to .92. Second, dimension 4, activity, did not predict whether third graders want to be like TV characters (Beta=.28, n.s.). Dimension 4 was, however, a significant predictor for both fifth and seventh grades.

Finally, the magnitude of the regression weights for dimension 3, attractiveness, varied greatly with age. Attractiveness was most predictive for seventh graders (Beta=.63, $p<.001$) and least predictive for fifth graders (Beta=.39, $p<.05$). Third graders

Table 10

Zero Order Correlations and Standardized Regression Weights for Predicting Mean Ratings on Two Media Effects Variables From Four INDSCAL Dimensions (Males and Females)[a]

	Unsupported Humor DIM 1		Masculine Strength DIM 2		Feminine Attractiveness DIM 3		Activity DIM 4				(corrected for shrinkage)
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Want to be like											
males	+.13	-.06	+.74*	+.89**	+.19	-.00	+.29	+.56*	.90**	.81	.72
females	+.55*	+.27	-.17	-.21	+.83**	+.74**	+.44	+.08	.91**	.84	.76
Want to do like											
males	+.15	-.11	+.42	+.59*	+.23	+.05	+.46	+.65*	.74	.55	.35
females	+.51	+.19	-.27	-.25	+.72*	+.62*	+.58*	+.28	.89*	.79	.70

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value for each of the media use variables (based on the mean rating given the character by males and females). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

Table 11

Zero Order Correlations and Standardized Regression Weights for Predicting Mean Ratings on Two Media Effects Variables From Four INDSCAL Dimensions (Third Grade, Fifth Grade, Seventh Grade)[a]

	Unsupported Humor DIM 1		Masculine Strength DIM 2		Feminine Attractiveness DIM 3		Activity DIM 4				(corrected for shrinkage)
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Want to be like											
Third	+.43	+.15	+.39	+.42*	+.71*	+.55*	+.36	+.28	.86*	.73	.61
Fifth	+.53	+.20	+.28	+.39*	+.62*	+.39*	+.60*	+.52*	.88*	.78	.68
Seventh	+.48	+.12	+.26	+.31*	+.80**	+.63**	+.52	+.40*	.92**	.86	.80
Want to do like											
Third	+.40	+.11	+.08	+.16	+.53	+.38	+.52	+.42	.60	.48	.26
Fifth	+.40	+.04	-.00	+.12	+.54*	+.36	+.68*	+.61*	.79*	.63	.46
Seventh	+.43	+.04	+.00	+.08	+.72*	+.57*	+.65*	+.52*	.87*	.77	.67

*p<.05
**p<.001

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value for each of the media use variables (based on the mean rating given the character by each grade). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

were between the two, although closer to the seventh grade (Beta=.55, $p<.05$).

Grade differences in predicting "want to do like" were more obvious. None of the dimensions predicted this variable for the third graders (R=.69, n.s.). The multiple correlation increased to .79 ($p<.05$) for the fifth graders and to .87 ($p<.05$) for seventh grade. Only one dimension, activity, predicted "want to do like" for the fifth grade (Beta=.61, $p<.05$) while two dimensions, attractiveness and activity, were significant predictors for the seventh grade (Beta=.57 for attractiveness, $p<.05$; Beta=.52 for activity, $p<.05$).

To summarize, these are the results from using four dimensions to predict how much children want to be like and do like a sample of fourteen TV characters:

1) For the total sample of children, the four dimensions yielded significant multiple correlations for predicting both dependent variables.

2) The strength and activity dimensions predicted the dependent measures best for males and attractiveness predicted best for females.

3) For third graders only, the activity dimension did not predict "want to be like," and none of the dimensions predicted "want to do like."

4) For all males, the multiple correlations for "want to be like" were insignificant, while the same correlations for all females were significant. Dimension 3, attractiveness, was the best predictor of this variable for the females.

CHAPTER IV

SUMMARY AND DISCUSSION

The purpose of this study was to examine the perceptual dimensions used by children to differentiate television characters. The utility of these dimensions in predicting media effects and subgroup differences in dimension content were also examined.

All past research in this area had used dimensions defined by the researcher as important in understanding television's impact on children. The methods used to define the dimensions without suggesting their content were, therefore, very important in this study.

Multidimensional scaling of 14 TV characters was accomplished by asking third, fifth, and seventh graders to judge whether all possible pairs of the sample of characters were alike or different. This method had the advantage of letting children differentiate among the characters by whatever attributes they chose to think about. These results were then compared with unidimensional evaluations of characters on attributes defined by pre-test and past research.

Four interpretable dimensions were found from the multidimensional analysis. In decreasing order of variance explained in the final solution they were: unsupported humor, masculine strength, feminine attractiveness, and activity. An hypothesis that older children would use more dimensions to differentiate TV characters than younger children was not supported.

One hypothesis concerning developmental differences in dimension content was supported. Younger children were more reliant on dimensions descriptive of physical attributes (strength and

attractiveness) and older children depended more on the dimensions descriptive of TV character's behavior (unsupported humor and activity).

Although no hypotheses about sex differences in dimension content were made, two sex differences were found. Males weighted support and strength more than females, and females weighted attractiveness more than males. "Good" was related to strength for males and to attractiveness for females.

For the total sample of children, the four dimensions predicted whether they wanted to be like or "do" like television characters. The strength and activity dimensions predicted these measures best for the males and attractiveness predicted best for the females.

Discussion

The results of the study will be discussed generally in the same order as the presentation of results. Comments about the methods used in the study will be discussed first, followed by dimension content, subgroup spatial differences, and prediction of media effects variables with the perceptual dimensions.

The relationship of two independently collected sets of data was the basis for most of the results. Children were asked to rate the similarity of all possible pairs of 14 TV characters and to judge the same characters on eight specific attributes.[1] The

[1]Sex of characters was not a judgment made by subjects. It was the ninth attribute. This attribute was entered by the researcher with the assumption that children could tell the difference between males and females on TV.

coordinate values for the TV characters, as determined by multidimensional scaling, were then correlated with the mean ratings for each character on the unidimensional attributes.

Generally, these correlations were very high. Of the nine unidimensional attributes, the multiple correlation of four dimensions on each attribute was greater than .90 in five cases. Two other multiple correlations were greater than .80 and two were insignificant (age and perceived reality).

Given the frequent concern about survey measurement with children, these results are very encouraging. The reliability of the similarity judgments was not much greater than .50, yet the dimensions from the INDSCAL analysis explained over 80% of the variance in the unidimensional measures in the majority of cases.

Ideally, the two methods should have produced isomorphic results. Each operation was attempting to measure which dimensions children use to differentiate TV characters. It is, therefore, important to note that the high multiple correlations do not represent a theoretically independent set of variables predicting a dependent variable. The correlations indicate the relationship in a multi-method approach to measurement.

These results suggest added confidence in simple, Likert type measurement with children. There is an important instance, however, when this confidence can be misleading. If it would have been possible to know a priori which dimensions would emerge in the multidimensional analysis, the entire study could have been based on univariate measurement. This, however, was not the case. At least

two of the hypothesized unidimensional attributes (perceived reality and age) were not highly predictable from the dimensions in the space.

To the extent that dimensions are known, unidimensional measurement may be within a range of precision that would make more complicated multidimensional analysis unnecessary. Even with a sample of only 14 TV characters, 91 similarity comparisons were required of each child.

If the dimensions are not known in advance, methods such as the multidimensional technique used in this research seem imperative. Media researchers may have already allocated considerable effort to exploring perceptual dimensions which possibly do not exist or are at best only minimally operative.

Dimensionality of Subgroup Spaces

Before dimension content was examined, the three grade levels were analyzed to determine if the same number of dimensions existed for each age group. Based on a considerable past literature on developmental differences in the dimensionality of person perception, it was hypothesized that older children would use more dimensions to distinguish TV characters than young children. There was no evidence, however, to support this expectation.

This is only the second known study to report no age differences in the dimensions children use to evaluate other people. It is also only the second study to employ multidimensional scaling. Olshan (1971) reported no dimensionality differences between children in

a similar age range. Although her research dealt with person perception in general and not with TV characters, the same number of dimensions adequately represented similarity data for third, sixth, and ninth graders.

This multidimensional analysis and the one by Olshan at least suggest that changes in dimensionality need to be verified with more rigorous methods than adjective check lists. Clearly, similar research must be done with younger children, however, methods that rely on judgments dependent as much on vocabulary skills as true cognitive processing changes may be misleading.

Similarity in the concept spaces for children at three different age groups is not very supportive of extensive developmental shifts in the dimensionality of cognitive processes. There was, however, a limitation of this study that may have minimized the possibility of finding developmental differences. The range of children's ages in the sample did not represent all of the critical developmental periods. In fact, it could be argued that by third grade, socialization to television may be complete to the extent that third and seventh graders should perceive TV characters similarly.

There are at least two other plausible explanations for the similarity in the number of perceptual dimensions. First, a maximum number of usable dimensions may have been reached by third grade. It is possible that three or four dimensions represent the most complex system for categorizing TV characters available to children or even to adults. The addition of new dimensions may progress only

through early development and achieve a ceiling level after considerable experience with the medium.

Second, the similarity between age groups may be due to other effects of socialization that are countering the development of more complex cognitive processes. At the same time that complexity of evaluation is increasing for children, they may also be learning the relevant dimensions which society expects us to use in evaluating others. The ability to use more dimensions then, may be offset by the discovery that only certain ones should be applied.

Dimension Content

The most obvious dimension which emerged in the multidimensional space was humor. It accounted for the majority of variance in the four dimensional solution. Due to the high negative association with support, humor here was labeled somewhat differently than might be expected.

Although no previous research has looked at the role of humor in imitation, it seemed reasonable to assume that children would positively evaluate humorous behavior. Funny people are generally reinforced for their talent, making them desirable models.

The humor which emerged in this analysis was, however, unsupported humor. The characters most representative of this attribute were those laughed at rather than laughed with -- the classic "boobs." Characters at the other end of the dimension were not funny, but very much supported by television peers.

These results suggest that the humor dimension which differentiates TV characters is not a positive, sought after attribute. The

total inability of the unsupported humor dimension to predict which characters children wanted to do like or be like supports this finding. While this dimension represents the primary characteristic that differentiates TV characters, it is not related to children's application of television to real life.

While these results are not contradictory to previous research on humor, several studies would predict that the characters liked most by their TV peers would be most eligible for modeling. Bandura's notion that vicarious reinforcement is as much a determinant of behavior as direct reinforcement is not supported in this study. Highly supported characters are no more desirable than the comical boobs.

It is possible, however, that for children there is a difference between liking someone (the wording used in the questionnaire) and being supportive. Since it was assumed that "support" would not have a common referent for all age groups (and maybe no referent for the third graders) the word "like" was substituted as a reasonable synonym.

Since this was the only dimension which did not to some extent predict either of the two dependent measures, it can also not be assumed that all dimensions used in information processing are related to subsequent behavior. Testing of the dimension's relationship to attitudes and behavior was in this case, however, only a beginning. Other research employing perceptual dimensions as predictors of media effects should further explore the extent to which humor mediates children's modeling of TV characters.

The humor dimension was most supportive of the hypothesized developmental shift in the use of dimensions descriptive of TV character's behavior. Humor is used much more by older children to differentiate TV characters.

This particular shift could be related to the "laugh at" context of the humor dimension. Younger children may not be as able to recognize which characters are comically portrayed. The distinction between the talent or ability to make people laugh and humor associated with mistakes and misfortune may require considerable experience with television entertainment.

Another explanation for the increased use of humor by older children may be dependent on differences between person perception in general and perception of people on TV. Younger children may be more inclined to evaluate TV characters in the same way they do people in real life. Older children, however, may have been socialized that television is entertainment. Their perception of people on TV may be influenced by their recognition of a primary function of the medium.

Dimensions 2 and 3 are probably best discussed together because they both represent stereotypic evaluations of other people. While these dimensions do not account for as much variance in the multidimensional space as humor, they are most predictive of children's desires to be like and do like TV characters.

The content of the two dimensions, masculine strength and feminine attractiveness, are both descriptive of physical attributes of TV characters. They are also more present in the spaces of younger

children. These attributes are easily recognizable by young children and their increased use is generally supportive of research on developmental changes in information processing abilities.

The stereotypic use of these dimensions is probably most associated with sex differences. Males should use the strength dimension most and females the attractiveness dimension. This was the finding, although both dimensions were significant predictors of the two attributes for both sexes. Furthermore, the spatial configurations for males and females were generally very similar as determined by canonical correlation analysis.

This finding is most interesting when the predictive power of the two dimensions is considered. For males, strength was the primary predictor of wanting to do like and be like TV characters while attractiveness was totally unrelated to the two dependent measures. For females, the opposite was true. Attractiveness was highly predictive of the two measures and strength was unrelated. The magnitude of the multiple correlations, however, was equal. The conclusion is that cognitive structures for males and females are the same while the use of the structures is completely different.

This is different from saying that only males use the dimension strength and, therefore, strength is only predictive of media effects for males. Males use both strength and attractiveness, but only one dimension is applicable to their modeling decisions. The same is true for females' use of attractiveness.

The relation between the attribute good and the two dimensions is also consistent with sex differences in the prediction of the

dependent measures. Good was most related to strength for the males and to attractiveness for the females. This indicates, rather obviously, that children are most interested in imitating good people.

These results may be more expected by parents than psychologists studying sex differences. In an extensive current review of psychological research on sex differences, Maccoby and Jacklin (1975) find no support for assuming that male and female children differentially use dimensions traditionally associated with their sex. Increased aggression among males is a well documented finding and this could possibly explain their dependence on the strength dimension to evaluate TV characters as suitable for imitation. Regarding the stereotype that females are dependent on attributes related to social interaction (i.e. physical attractiveness), Maccoby and Jacklin conclude there is no empirical support. This study would seem to be a glaring exception. The regression weight for dimension 3, attractiveness, as a predictor of wanting to be like TV characters was .74 ($p<.001$) for females and .00 for males.

A note should be made about attaching sexual descriptions to strength and attractiveness. Masculine and feminine were included in the dimensions because they were also highly predictive of the sex of TV characters. The lack of female TV characters in the sample (and also on TV in general) may make these labels misleading.

For masculine strength, the females were the three characters most unrepresentative of the dimension. If different characters were included (for example, Christie Love -- female police officer and judo expert) this may have altered the dimension's correlation with sex.

For feminine attractiveness, only the two older female characters (Mary Tyler Moore and Samantha) ranked high on the dimension. Attractive males included in the sample (e.g. Steve Austin and Hawkeye) were rated almost as high. Again, with a different sample of characters, the tendency for females to dominate the high end of dimension may be less obvious. These speculations are further caution that the dimensions uncovered in this study are totally related to the television characters which were used.

The fourth dimension was activity. Although this dimension accounted for the least amount of variance in the final solution, it did predict which characters certain subgroups most wanted to be like and do like.

Activity, a behavioral attribute, was most present for older children. This result was supportive of the hypothesis that older children would rely more on behavioral descriptors. This result could have been more a function of age differences in the meaning of activity.

The label "activity" was an attempt to operationalize comments from children in the pre-test interviews that certain characters "moved around a lot" or "did a lot of different things." It is possible that for fifth and seventh graders, the word "activity" adequately represented these characteristics, but for the the third graders the word did not have as concrete a meaning.

Furthermore, the attribute "active" could be predicted for the third graders. Dimension 2 (strength) predicted activity as well for the third graders as dimension 4 did for fifth and seventh

graders. Perhaps active is more of a physical attribute for the younger children.

Although "activity" does not account for a substantial proportion of variance in the multidimensional solution (5%), it is highly predictive of the dependent measures. It provides a good example that the criteria for eliminating dimensions, factors or clusters from a solution should not depend only on the percentage of variance accounted for in the final solution.

Activity was most predictive of wanting to be like and "do" like TV characters for the males. The only group of females for which activity was a significant predictor was the seventh graders. Activity predicted both measures for all groups of males except third graders.

The above conclusions were taken from a grade by sex breakdown in the regression analysis. Both sex and grade analyses suggested that a grade by sex breakdown would further illustrate subgroup differences in the predictiveness of the four dimensions. Table 12 shows the results of this analysis.

For the variable "want to be like," male/female differences are similar to previous analyses, except for dimension 4, activity, as a predictor for the males. Activity is only a significant predictor for fifth and seventh grade males. For females at all ages, attractiveness is equally predictive of which TV characters they want to be like.

A breakdown for the variable "want to do like" revealed greater sex by grade differences. For males at all ages, the four dimensions

Table 12

Zero Order Correlations and Standardized Regression Weights For Predicting Mean Ratings On Two Media Effects Variables From Four INDSCAL Dimensions (Grade By Sex Breakdown)[a]

	Unsupported Humor DIM 1		Masculine Strength DIM 2		Feminine Attractiveness DIM 3		Activity DIM 4				(corrected for shrinkage)
	r	Beta	r	Beta	r	Beta	r	Beta	R	R^2	R^{2b}
Want to be like											
3rd males	.04	-.13	+.76*	+.89**	+.16	-.00	+.18	+.48	.87*	.77	.67
5th males	.20	-.00	+.63*	+.81**	+.13	-.10	+.38	+.63*	.87*	.76	.65
7th males	.18	-.04	+.74*	+.87**	+.32	+.12	+.30	+.52*	.92**	.84	.76
3rd females	.53*	.31	-.16	-.24	+.78**	+.72**	+.31	-.05	.87*	.76	.65
5th females	.53*	.27	-.24	-.27	+.74*	+.65*	+.46	+.11	.87*	.76	.65
7th females	.52*	.18	-.09	-.10	+.87**	+.77**	+.51	+.21	.94**	.89	.85
Want to do like											
3rd males	.07	-.10	+.55*	+.69*	+.11	-.04	+.27	+.51	.72	.52	.30
5th males	.15	-.11	+.32	+.49	+.18	+.00	+.49	+.67*	.69	.47	.24
7th males	.22	-.11	+.32	+.47	+.40	+.23	+.55	+.66*	.77	.59	.41
3rd females	.49	.22	-.28	-.27	+.64*	+.54*	+.50	+.20	.80*	.64	.48
5th females	.50	.18	-.35	-.32	+.69*	+.59*	+.60*	+.29	.89*	.79	.70
7th females	.49	.11	-.17	-.13	+.79**	+.68**	+.62*	+.36*	.92**	.85	.79

*$p<.05$
**$p<.001$

[a]The correlations and regression analysis are based on an n of 14, the number of TV characters. Each character has a coordinate value for each dimension (based on the INDSCAL analysis) and a value for each of the media use variables (based on the mean rating given the character by each grade by sex subgroup). These two numbers are the X and Y values in the correlations.

[b]See Quinn McNemar, Psychological Statistics, Wiley, Inc., 1969, pp. 205-206.

yielded insignificant multiple correlations. These correlations for females, however, were significant at all three age levels. Dimension 3, attractiveness, increased in magnitude as a predictor of "want to do like" as age increased. For the seventh grade females, dimension 4, activity, was also a significant predictor.

A general comment should be made about the conceptualization of the four dimensions. The labels given each dimension came from the unidimensional attributes which were hypothesized to emerge in the space and which were measured separately in the study. If a unidimensional attribute could be predicted by one of the dimensions from the multidimensional space, then that attribute was included in the conceptualization of the dimension in the same form as it appeared in the unidimensional question. For example, strength was predicted by dimension 2, therefore, dimension 2 was called "strength."

It is possible that the inclusion of other attributes would have changed the labels attached to each dimension. There could be attributes which are highly correlated with those used that would add to or more clearly define the dimensions.

Dimension 1 is a good example. If support were not included in the study, dimension 1 would have been labeled just "humor." The high negative association between support and dimension 1, however, suggested the dimension be interpreted as unsupported humor.

There could be other attributes not included that might change the labels placed on any dimension. Is violence related to masculine strength? Are attractive females also nurturant?

These dimensions should also not be interpreted as having polar opposites for anchors. For example, it should not be assumed that the opposite of highly funny characters are serious characters unless the attribute serious is later found to negatively correlate with funny. In fact, by examining where various characters rank on the unidimensional ratings, it may not even be safe to say that a low rank means the character does not possess the attribute. The only conclusion that can be safely drawn is the relative position of each character in relation to other characters in the sample. All characters, for example, were perceived as being highly supported by their peers, only some were more supported than others.

Differences in the Dependent Measures

Among subgroups of children, the extent to which children wanted to be like and "do" like TV characters was definitely related. There were differences in these two measures, however, that are worth noting.

Generally, the four dimensions accounted for more variance in children's desire to be like than to do like TV characters. For every sex by grade subgroup (Table 12), the multiple correlation for be like was larger than for do like. This is perhaps a little surprising since to be like a character seemingly requires a greater commitment. There could be numerous characters who may not be acceptable in general, but who possess certain attributes or do different things that would be suitable for imitation.

In fact, the mean ratings for each character on "do" like were in all cases higher than the means for be like. The lower multiple

correlations for do like only signify that children's desires to do like characters were more difficult to predict from the four dimensions.

The grade by sex regression analysis showed the greatest differences in the two dependent measures (Table 12). For males in all three age groups the multiple correlation for the four dimensions as predictors of "want to be like" were insignificant. All of the other subgroups had significant values.

It is difficult to say why the extent males want to do like characters is unpredictable while it is for females. Perhaps there is no systematic means by which males select portions of TV character's behavior to model. For males it seems to be all or nothing.

The INDSCAL Method

Many different metric and non-metric multidimensional scaling procedures and programs are becoming available. Each program incorporates new ideas about multidimensional scaling and because of the relative newness of this methodology some comments about INDSCAL seem appropriate.

Evaluating the face validity of INDSCAL is probably most important. If the program is not able to create from the similarity data a configuration of concepts that makes sense, the method is of little use.

The first three INDSCAL dimension were readily interpretable even before the regression analysis. Just by examining the plots of TV characters, it was apparent that humor, strength, and attractiveness, or very similar concepts, would describe the dimensions.

This is not to say that the interpretation of the spaces can be totally credited to INDSCAL; however, the program provided no obstacles in the interpretation.

In literature discussions of the multidimensional programs, serious criticisms are leveled against various procedures (i.e. use of non-metric programs, ordinal vs. interval/ratio similarity judgments). The INDSCAL program has been technically criticized in regard to use of specific algorithms used to derive the concept spaces. Some methodologists maintain that subtle differences in the calculations have the potential of greatly changing results. To check the external validity of the INDSCAL program, the similarity judgments used in this study were input into a different multidimensional program.

The other program used was Galileo (Serota and Woelfel, 1974). It is a computer package for metric multidimensional scaling. Canonical correlation analysis was used to test the similarity of spaces generated by the two programs. The first four canonical correlations were .99, .98, .94, .81, all significant beyond .001. This analysis indicated a very high degree of isomorphism between the two programs and increased the confidence which can be placed in the INDSCAL solutions. Similar comparisons done between INDSCAL and other non-metric programs (e.g. the Kruskal program) have shown similar results (Sherman, 1971).

One unique aspect of the INDSCAL procedure which was not utilized in this research may be especially appropriate for future media studies. The INDSCAL program not only provides for the input of

subgroup similarity matrices (in this study, three grades and two sexes), but also for each individual subject's similarity matrix. The program will calculate comparable individual spaces for each subject.

The analysis of individual spaces may answer one question not dealt with in this study. Although the subgroup spaces were generally very similar, how representative is the subgroup space of the individuals within that group? For example, it could reasonably be hypothesized that individual variance in the space for seventh graders would be less than for third graders. Greater chance for socialization may decrease individual differences in how children perceive television. This hypothesis can be tested only by analyzing individual spaces.

Future Research

It seems most appropriate to discuss future research related to this study before discussing the implications of the present findings. Because this study was a first attempt to describe and apply the dimensions children use to differentiate TV characters the implications of the findings depend a great deal on further empirical confirmation.

Probably most important is the validation of these dimensions using different samples of television characters. Because dimension content in multidimensional scaling is a function of the concepts used, these dimensions may be related only to this particular sample of characters.

One of the primary considerations in selecting characters for this sample was familiarity across a large age range. This method of selection, however, left out characters which are very popular with only younger or older children. Future samples should include dramatic characters from late evening television (e.g. Christie Love, Mannix) and other cartoon and late afternoon characters.

It is even possible that the similarity in multidimensional solutions across age groups could have been forced because the same characters were used for all three grades. A more convincing test of space similarity would come from a comparison of two spaces in which the characters represented the unique viewing habits of the specific age group.

It is not even totally unreasonable to envision a study in which primary TV characters would not have to be sampled. There are only slightly over 60 such characters on the air at this time. By using separate samples of children to complete different portions of the necessary paired comparisons, similar analyses would then be able to examine population parameters.

While it is still possible that these characters have yielded dimensions unique only to themselves, it is also a possibility that the values are unrepresentative because of the sample of children. Other studies should base the character ratings on a more hetrogeneous group of children that vary on qualities other than age and sex (e.g. socioeconomic status, cross-cultural differences, etc.).

Ohter unidimensional attributes should also be tested for their relation with the dimensions in the space. As previously mentioned,

other attributes which are either positively or negatively related to those used in this study may alter the conceptualization of some dimensions.

The use of perceptual dimensions to predict media effects was limited in this study. Although the dimensions were highly associated with children's desire to be like and do like TV characters, these measures represented a small sample of those possible. It would be useful to know if the dimensions children use to distinguish characters are related to exposure, behavioral measures of imitation, learning of sex roles from TV, identification with characters, etc.

Finally, a greater range of age groups should be studied. It is possible that by third grade children have already been socialized to uniformly evaluate television and TV characters. Ideally, children as young as age three should be included. They have already had one years experience with the medium and have no doubt developed systematic conceptions of favorite portrayals. This inclusion, however, implies the development of simpler, less time consuming methods of reliably measuring children's judgments of television.

Experimental studies could be used to further test developmental and sex differences in the content and use of these dimensions. Children shown identical portrayals in controlled settings could be subsequently tested on both perceived differences between characters and the applicability of defined attributes. Exposing each child to the same segment of a character's behavior would assure a common referent for their evaluations. In a survey situation these referents can only be assumed.

Present Implications of Research Findings

This type of research should not only be useful for guiding future empirical studies on media and children. There are also several implications for the production and evaluation of television for child audiences. The knowledge of which character attributes are most responsible for impact on children can greatly increase the deliberate communication of pro-social messages and decrease the effects of anti-social portrayals. Each dimension and its association with the media effects variables in this study is related to both types of impact.

First, humor appears to be a neutral attribute in terms of differentiating characters which children model. Producers should not depend on humor to deliver pro-social messages, nor is there reason to believe that funny violence, for example, is any different from serious violence. Perhaps the Cookie Monster should not be counted on to teach children good table manners.

Strength, attractiveness and activity are clearly attributes which producers and parents should be aware of. The more they are perceived to be present, the greater the impact of the portrayal. These findings suggest that strong active males will have the greatest effect on girls. As with the other dimensions, the results can be used to either augment prosocial messages on television or diminish negative consequences of exposure.

The regression equations from this research could actually be used to calculate which characters would have the most impact for certain subgroups of children. By multiplying the regression weight

for each dimension by the coordinate value for each TV character on that dimension, a value could be calculated which represented TV character's likely effect.

For example, the regression equation for predicting which TV characters males most wanted to be like is:

$$Y = (-.06)(\text{value for DIM 1}) + (.89)(\text{value for DIM 2}) + (.00)(\text{value for DIM 3}) + (.56)(\text{value for DIM 4})$$

Y in the formula represents the mean rating on "want to be like" for each character. The equation predicts 75% of the variance in Y.

Applying this formula to all fourteen of the TV characters yields the following results. The values for each character should indicate the extent to which males want to be like each character based on a weighted consideration of all four perceptual dimensions.

Character	Predicted Value of Y for Males
Steve Austin	.339
Hawkeye	.329
Reed	.309
Chico	.292
Marshal Dillon	.222
Fred Sanford	.021
John-Boy	.020
Archie Bunker	-.181
Samantha	-.235
Gilligan	-.254
Fred Flintstone	-.255
Fat Albert	-.267
Laura	-.343
Mary Tyler Moore	-.435

From these values the relative impact of several TV characters can be found. Content analyses could be done to determine the behaviors of those characters highest on the list. The combined information

would indicate which characters and which behaviors were most likely having an impact on children.

These lists, however, would be no more accurate for all children than the regression analyses were in this study. Separate consideration should be given to different age groups and especially to males and females. Applying the equation for females yields a completely different table:

Character	Predicted Value of Y for Females
Semantha	.459
Mary Tyler Moore	.371
Laura	.253
Steve Austin	.178
Reed	.062
Hawkeye	.049
Marshal Dillon	.002
Chico	-.026
John-Boy	-.047
Gilligan	-.099
Fred Sanford	-.106
Archie Bunker	-.173
Fat Albert	-.403
Fred Flintstone	-.408

It is obvious from a comparison of the tables that children identify most with same sex TV models. The portions of the tables that are similar (Steve Austin through Chico) are, however, based on entirely different dimensions. For the males, these characters are ranked high because they are strong and active. For the females, they rank second to the TV females because they are the most attractive.

These "impact values" provide a very precise way of determining which characters to watch most closely. They are not based on content analysis of researcher defined attributes, as most other

ratings of TV shows and characters. They are dependent on the character's rating along perceptual dimensions which are maximally weighted to predict children's identification with TV characters. As indicated by the multiple correlations, these should be very good predictions.

Relation of Results to Past Research

Media research had already proceeded beyond simple relationships between exposure and effects to the study of mediating cognitive processes which predict effects for some children and none for others. Research on the perceived reality of television is a good example of this research.

This research attempted to take the study of these intervening processes one step further. The methods were chosen so that dimensions would not be forced on children but rather would be generated from data based only on similarity ratings between TV characters. Do the dimensions which were found in this study mean, then, that others do not exist, or that ones used successfully in the past to predict media effects are not operative?

The relation of these dimensions to those used in previous research is very important. A probable interpretation is that children are capable of distinguishing characters along several dimensions when provided with a concrete description of the attribute. Children could probably very accurately rank TV characters according to length of hair. This ability, however, does not signify that the dimensions are in fact operative or related to the character's impact.

This is the most likely explanation for the inability of the dimensions to predict the perceived age or perceived reality of TV characters. There are good theoretical rationales why both variables should predict media effects. Younger characters should be more desirable because they are likely to engage in behaviors and activities most salient to young children. More realistic characters should increase the acceptability of applying TV behavior to real life.

While the relation of both these variables to media effects may still be valid, they first must be operative as a perceptual process. At least in this study, this is where they failed. Even if they are found to be highly predictive of media effects, their use by children to differentiate TV characters appears to be minor at best.

What do we know about children and television that wasn't known before? Very generally, we have some idea of the dimensions children use to discriminate between television characters, and there is evidence that these information processing formats are related to how children apply media portrayals to their own lives.

These findings also seem relevant to general communication theories of information processing. When people categorize information, the information is likely to be systematically differentiated along one or several dimensions. The methods used here have been demonstrated to be a useful and parsimonous means of obtaining these dimensions. These dimensions then should be related to the information's application to real-life situations.

The findings here could be generalized to the processing of communication messages other than those from television. For example, political messages may be categorized according to the dimensions important in voting decisions. Information about occupations may be processed along dimensions relevant to vocational choices, and interpersonal relationships may be sorted according to their function for the participating individuals.

These examples suggest that messages are processed in relation to the information's function. These functions may determine how information is originally interpreted and categorized for later use. Humor may be an important dimension for differentiating TV characters because humor is a primary attribute that assists children in deciding which characters to watch; strength may be a dimension because it helps children (at least males) identify appropriate TV models.

Similar reasoning could apply to dimensions used to differentiate communication messages about other concepts. For example, the type of information necessary to decide a vote may determine the dimensions underlying political messages. If people decide votes based on candidates attractiveness, then attractiveness should be a dimension that differentiates political candidates.

The idea that dimensions of message effects will predict the dimensions of message processing is the most general implication of the present study. Although the data here relate most to the processing dimensions of television information, there is at least preliminary evidence that these dimensions will predict important effects of the same content.

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APPENDIX A

Pre-Test Questionnaire

(Introduce yourself to student)

A lot of times people ask adults what they think about the shows and people they watch on TV. Today we are interested in what young people think about TV.

Here are some questions about the people and shows on TV. Please listen to the questions and then tell me what you think. There are no right or wrong answers, we just want to know what you think.

First, we want to know about some of your favorite television shows.

What are your two most favorite TV shows?

A) _____ B) _____

Now tell me who are your two most favorite TV characters?

1) _____ 2) _____

Who are two characters you don't like on TV?

3) _____ 4) _____

(Use the characters' names as indicated above in asking the following questions.)

How is (1) different from (3)?

_____

_____

(is there anything else?): _____

How is (2) different from (3)?

_____

_____

(is there anything else?): _____

How is (1) different from (2)?

_____

_____

(is there anything else?): _____

How is (3) different from (4) ?

(is there anything else?):

How is (2) different from (4) ?

(is there anything else?):

How is (1) different from (4) ?

(is there anything else?):

Is there anything that (1) does that you would like to do?

(If yes): What?

If there anything that (2) does that you would like to do?

(If yes): What?

Student's name:

APPENDIX B

Description of Television Characters Used for Similarity Judgments

Appendix B lists the TV characters used in the study, the network and time of day of the program they appear on, and a brief description of them and their program. This information is based on listings from an April, 1975, issue of TV Guide.

Fred Sanford on "Sanford and Son" (NBC, Saturday, 8:00 p.m., EST). Fred Sanford is in a junk yard partnership with his 30-year-old son. The two live next to their junk yard. A situation comedy, the program usually focuses on conflicts between the lifestyles of Fred and his son. Both characters are black.

Fred Flintstone on "The Flintstones" (Syndicated, Saturday, 10:30 a.m., EST). "The Flintstones" is a cartoon series which depicts a fantasy version of prehistoric life. Fred Flintstone is the head of a cave family from which most of the characters are taken.

Gilligan on "Gilligan's Island" (Syndicated, weekdays, 4:00 p.m., EST). Gilligan is one of seven vacationers trapped on a tropical island after the wreck of their pleasure yacht. Most episodes comically portray different attempts by the group to escape. Gilligan is generally considered the comical "boob" of the group and he is frequently faulted for their failures to escape.

Laura on "Little House on the Prairie" (NBC, Wednesday, 8:00 p.m., EST). Laura is the second oldest of three girls (approximately age 7 or 8) in a Mid-Western prairie family. The family lives on a farm near a small agricultural town during the late nineteenth century. Frequent themes of the program are attempts by families in the community to help others through various troubles.

Mary Tyler Moore on "The Mary Tyler Moore Show" (CBS, Saturday, 9:30 p.m., EST). Mary Tyler Moore portrays a TV news producer in a small Minneapolis newsroom. The situation comedy usually focuses on events at the newsroom and on others who work at the TV station.

Reed on "Adam-12" (NBC, Tuesday, 8:00 p.m., EST). Reed is one of two uniformed police officers who patrol various neighborhoods in a squad car. The program most frequently portrays the more common aspects of law enforcement. The officers code name for assignments is "Adam-12."

Samantha on "Bewitched" (Syndicated, weekdays, 7:00 p.m., EST). Samantha is a witch in the person of an attractive woman married to an advertising executive. Most stories involve her relatives' use of witchcraft to get her mortal husband into trouble with advertising clients, and Samantha's use of magic to save him from embarrassment and failure.

Hawkeye on "M*A*S*H" (CBS, Tuesday, 8:30 p.m., EST). Hawkeye is an MD working with a mobile field hospital in the Korean war. Both comical and serious parts of the program deal with conflicts between two drafted doctors who are unsympathetic to the war and patriotic attempts by other staff to promote the war effort.

Archie Bunker on "All in the Family" (CBS, Saturday, 8:00 p.m., EST). Archie is the father in a family consisting of his wife, daughter and daughter's husband. Several episodes in the situation comedy involve conflicts between the conservative attitudes of Archie and the liberal ideas of his son-in-law. This series was one of the first to deal comically with such topics as racism, sex, and religion.

Chico on "Chico and the Man" (NBC, Friday, 8:30 p.m., EST). Chico is a young Chicano working for an elderly man in an urban gas station. Most episodes involve Chico's attempts to help his unwilling boss with personal problems or with fixing up and promoting the gas station.

Steve Austin on "The Six Million Dollar Man" (ABC, Friday, 7:30 p.m., EST). Steve Austin is an astronaut and government agent who possesses unusual strength as a result of bionic limbs and eyesight. After a near-fatal flying accident, Austin was given special artificial body functions to replace those damaged in the accident. Most episodes in this action adventure series deal with Austin's use of his strength to overcome environmental or personal opposition.

Fat Albert on "Fat Albert and the Cosby Kids" (CBS, Saturday, 12:30 p.m., EST). Fat Albert is one of several children that play together in a Saturday morning cartoon series narrated by Bill Cosby. Each story focuses directly on some prosocial theme. Examples include: how to treat new kids in a neighborhood, destruction of property, and obedience to parents. The children in the series are black.

John-Boy on "The Waltons" (CBS, Thursday, 8:00 p.m., EST). John-Boy is the eldest in a large family living in the Virginia hills during the depression. Most episodes focus on individual members of the family and attempts by the others to help them through various problems.

Marshal Dillon on "Gunsmoke" (CBS, Monday, 8:30 p.m., EST). Marshal Dillon is the head law enforcement officer in a small nineteenth century western town. The series is the last to focus on "good guy/bad guy" episodes taken from traditional western films.

APPENDIX C

Group Questionnaire for Similarity Judgments

A lot of time people ask adults what they think about the shows and people they see on TV. Today we want to know what young people think about TV.

Here are some questions about the people and shows on TV. Please read the questions and then put an X on the line above what you think. There are no right or wrong answers, we just want to know what you think.

The questions ask you to think about two people on TV and then decide if you think they are alike or different. Here is an example.

What do you think about Fred Flintstone and Gilligan?

_____	_____	_____	_____	_____
very much alike	alike	I'm not sure	different	very different

Your Name: _____ (7-9)

Grade: _____

Room Number: _____

Card 1
Col. #

1. What do you think about Fat Albert and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different

10 _____

2. What do you think about Mary Tyler Moore and Archie Bunker? Are they:

very much alike	alike	I'm not sure	different	very different

11 _____

3. What do you think about Samantha and Fat Albert? Are they:

very much alike	alike	I'm not sure	different	very different

12 _____

4. What do you think about Archie Bunker and Steve Austin? Are they:

very much alike	alike	I'm not sure	different	very different

13 _____

5. What do you think about Marshall Dillon and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different

14 _____

6. What do you think about Steve Austin and Fred Flintstone? Are they:

very much alike	alike	I'm not sure	different	very different

15 _____

7. What do you think about Reed and Marshall Dillon? Are they:

very much alike	alike	I'm not sure	different	very different

16 _____

Col. #

8. What do you think about Fred Flintstone and Chico? Are they: 17 _____

very much alike	alike	I'm not sure	different	very different

9. What do you think about Hawkeye and Reed? Are they: 18 _____

very much alike	alike	I'm not sure	different	very different

10. What do you think about Chico and Fred Sanford? Are they: 19 _____

very much alike	alike	I'm not sure	different	very different

11. What do you think about Laura and Hawkeye? Are they: 20 _____

very much alike	alike	I'm not sure	different	very different

12. What do you think about Fred Sanford and John-Boy? Are they: 21 _____

very much alike	alike	I'm not sure	different	very different

13. What do you think about John-Boy and Laura? Are they: 22 _____

very much alike	alike	I'm not sure	different	very different

14. What do you think about Samantha and Gilligan? Are they: 23 _____

very much alike	alike	I'm not sure	different	very different

Col. #

15. What do you think about Mary Tyler Moore and Steve Austin? Are they: 24 _____

very much alike	alike	I'm not sure	different	very different

16. What do you think about Marshall Dillon and Fat Albert? Are they: 25 _____

very much alike	alike	I'm not sure	different	very different

17. What do you think about Archie Bunker and Fred Flintstone? Are they: 26 _____

very much alike	alike	I'm not sure	different	very different

18. What do you think about Reed and Samantha? Are they: 27 _____

very much alike	alike	I'm not sure	different	very different

19. What do you think about Steve Austin and Chico? Are they: 28 _____

very much alike	alike	I'm not sure	different	very different

20. What do you think about Hawkeye and Marshall Dillon? Are they: 29 _____

very much alike	alike	I'm not sure	different	very different

21. What do you think about Fred Flintstone and Fred Sanford? Are they: 30 _____

very much alike	alike	I'm not sure	different	very different

Col. #

22. What do you think about Laura and Reed? Are they: 31 _____

very much alike	alike	I'm not sure	different	very different

23. What do you think about Chico and John-Boy? Are they: 32 _____

very much alike	alike	I'm not sure	different	very different

24. What do you think about John-Boy and Hawkeye? Are they: 33 _____

very much alike	alike	I'm not sure	different	very different

25. What do you think about Fred Sanford and Laura? Are they: 34 _____

very much alike	alike	I'm not sure	different	very different

26. What do you think about Marshall Dillon and Gilligan? Are they: 35 _____

very much alike	alike	I'm not sure	different	very different

27. What do you think about Mary Tyler Moore and Fred Flintstone? Are they: 36 _____

very much alike	alike	I'm not sure	different	very different

28. What do you think about Reed and Fat Albert? Are they: 37 _____

very much alike	alike	I'm not sure	different	very different

Col. #

29. What do you think about Archie Bunker and Chico? Are they: 38 _____

very much alike	alike	I'm not sure	different	very different

30. What do you think about Hawkeye and Samantha? Are they: 39 _____

very much alike	alike	I'm not sure	different	very different

31. What do you think about Steve Austin and Fred Sanford? Are they: 40 _____

very much alike	alike	I'm not sure	different	very different

32. What do you think about Laura and Marshall Dillon? Are they: 41 _____

very much alike	alike	I'm not sure	different	very different

33. What do you think about Fred Flintstone and John-Boy? Are they: 42 _____

very much alike	alike	I'm not sure	different	very different

34. What do you think about John-Boy and Reed? Are they: 43 _____

very much alike	alike	I'm not sure	different	very different

35. What do you think about Chico and Laura? Are they: 44 _____

very much alike	alike	I'm not sure	different	very different

Col. #

36. What do you think about Fred Sanford and Hawkeye? Are they: 45 _____

very much alike	alike	I'm not sure	different	very different

37. What do you think about Reed and Gilligan? Are they: 46 _____

very much alike	alike	I'm not sure	different	very different

38. What do you think about yourself and Chico? Are you: 47 _____

very much alike	alike	I'm not sure	different	very different

39. What do you think about Hawkeye and Fat Albert? Are they: 48 _____

very much alike	alike	I'm not sure	different	very different

40. What do you think about Archie Bunker and Fred Sanford? Are they: 49 _____

very much alike	alike	I'm not sure	different	very different

41. What do you think about yourself and Fred Flintstone? Are you: 50 _____

very much alike	alike	I'm not sure	different	very different

42. What do you think about Steve Austin and John-Boy? Are they: 51 _____

very much alike	alike	I'm not sure	different	very different

Col. #

43. What do you think about John-Boy and Marshall Dillon? Are they: 52 _____

very much alike	alike	I'm not sure	different	very different

44. What do you think about Fred Flintstone and Laura? Are they: 53 _____

very much alike	alike	I'm not sure	different	very different

45. What do you think about Fred Sanford and Reed? Are they: 54 _____

very much alike	alike	I'm not sure	different	very different

46. What do you think about Chico and Hawkeye? Are they: 55 _____

very much alike	alike	I'm not sure	different	very different

47. What do you think about Hawkeye and Gilligan? Are they: 56 _____

very much alike	alike	I'm not sure	different	very different

48. What do you think about Mary Tyler Moore and Fred Sanford? Are they: 57 _____

very much alike	alike	I'm not sure	different	very different

49. What do you think about Laura and Fat Albert? Are they: 58 _____

very much alike	alike	I'm not sure	different	very different

Col. #

50. What do you think about Archie Bunker and John-Boy? Are they: 59 _____

very much alike	alike	I'm not sure	different	very different

51. What do you think about yourself and Mary Tyler Moore? Are you: 60 _____

very much alike	alike	I'm not sure	different	very different

52. What do you think about Steve Austin and Laura? Are they: 61 _____

very much alike	alike	I'm not sure	different	very different

53. What do you think about Fred Sanford and Marshall Dillon? Are they: 62 _____

very much alike	alike	I'm not sure	different	very different

54. What do you think about Fred Flintstone and Hawkeye? Are they: 63 _____

very much alike	alike	I'm not sure	different	very different

55. What do you think about Chico and Reed? Are they: 64 _____

very much alike	alike	I'm not sure	different	very different

56. What do you think about Laura and Gilligan? Are they: 65 _____

very much alike	alike	I'm not sure	different	very different

Col. #

57. What do you think about Mary Tyler Moore and John-Boy? Are they: 66 _____

very much alike	alike	I'm not sure	different	very different

58. What do you think about John-Boy and Fat Albert? Are they: 67 _____

very much alike	alike	I'm not sure	different	very different

59. What do you think about Archie Bunker and Laura? Are they: 68 _____

very much alike	alike	I'm not sure	different	very different

60. What do you think about Fred Sanford and Samantha? Are they: 69 _____

very much alike	alike	I'm not sure	different	very different

61. What do you think about Steve Austin and Hawkeye? Are they: 70 _____

very much alike	alike	I'm not sure	different	very different

62. What do you think about Chico and Marshall Dillon? Are they: 71 _____

very much alike	alike	I'm not sure	different	very different

63. What do you think about Fred Flintstone and Reed? Are they: 72 _____

very much alike	alike	I'm not sure	different	very different

Col. #

64. What do you think about yourself and Archie Bunker? Are you:

very much alike	alike	I'm not sure	different	very different

73 _____

65. What do you think about Mary Tyler Moore and Laura? Are they:

very much alike	alike	I'm not sure	different	very different

74 _____

66. What do you think about Fred Sanford and Fat Albert? Are they:

very much alike	alike	I'm not sure	different	very different

75 _____

67. What do you think about Archie Bunker and Hawkeye? Are they:

very much alike	alike	I'm not sure	different	very different

76 _____

68. What do you think about Chico and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different

77 _____

69. What do you think about Steve Austin and Reed? Are they:

very much alike	alike	I'm not sure	different	very different

78 _____

70. What do you think about Fred Flintstone and Marshall Dillon? Are they:

very much alike	alike	I'm not sure	different	very different

79 _____

Col. #

71. What do you think about Fred Sanford and Gilligan? Are they:

80 _____

very much alike	alike	I'm not sure	different	very different

Card 2

72. What do you think about Mary Tyler Moore and Hawkeye? Are they:

1 _____

very much alike	alike	I'm not sure	different	very different

73. What do you think about Chico and Fat Albert? Are they:

2 _____

very much alike	alike	I'm not sure	different	very different

74. What do you think about Archie Bunker and Reed? Are they:

3 _____

very much alike	alike	I'm not sure	different	very different

75. What do you think about yourself and Steve Austin? Are you:

4 _____

very much alike	alike	I'm not sure	different	very different

76. What do you think about Steve Austin and Marshall Dillon? Are they:

5 _____

very much alike	alike	I'm not sure	different	very different

Col. #

77. What do you think about yourself and Gilligan? Are you:

very much alike	alike	I'm not sure	different	very different

6 _____

78. What do you think about Chico and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different

7 _____

79. What do you think about Mary Tyler Moore and Reed? Are they:

very much alike	alike	I'm not sure	different	very different

8 _____

80. What do you think about yourself and Fat Albert? Are you:

very much alike	alike	I'm not sure	different	very different

9 _____

81. What do you think about Fred Flintstone and Fat Albert? Are they:

very much alike	alike	I'm not sure	different	very different

10 _____

82. What do you think about Archie Bunker and Marshall Dillon? Are they:

very much alike	alike	I'm not sure	different	very different

11 _____

83. What do you think about Steve Austin and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different

12 _____

Col. #

84. What do you think about yourself and Samantha? Are you:

13 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

85. What do you think about Fred Flintstone and Gilligan? Are they:

14 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

86. What do you think about Mary Tyler Moore and Marshall Dillon? Are they:

15 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

87. What do you think about yourself and Marshall Dillon? Are you:

16 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

88. What do you think about Steve Austin and Fat Albert? Are they:

17 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

89. What do you think about Archie Bunker and Samantha? Are they:

18 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

90. What do you think about yourself and Reed? Are you:

19 _____

very much alike	alike	I'm not sure	different	very different
_____	_____	_____	_____	_____

Col. #

91. What do you think about Steve Austin and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different	20 ____

92. What do you think about Mary Tyler Moore and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different	21 ____

93. What do you think about yourself and Hawkeye? Are you:

very much alike	alike	I'm not sure	different	very different	22 ____

94. What do you think about Archie Bunker and Fat Albert? Are they:

very much alike	alike	I'm not sure	different	very different	23 ____

95. What do you think about Archie Bunker and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different	24 ____

96. What do you think about yourself and Laura? Are you:

very much alike	alike	I'm not sure	different	very different	25 ____

97. What do you think about Mary Tyler Moore and Fat Albert? Are they:

very much alike	alike	I'm not sure	different	very different	26 ____

Col. #

98. What do you think about yourself and John-Boy? Are you:

very much alike	alike	I'm not sure	different	very different

27 _____

99. What do you think about Mary Tyler Moore and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different

28 _____

100. What do you think about yourself and John-Boy? Are you:

very much alike	alike	I'm not sure	different	very different

29 _____

101. What do you think about Mary Tyler Moore and Chico? Are they:

very much alike	alike	I'm not sure	different	very different

30 _____

102. What do you think about Laura and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different

31 _____

103. What do you think about Fred Flintstone and Samantha? Are they:

very much alike	alike	I'm not sure	different	very different

32 _____

104. What do you think about John-Boy and Gilligan? Are they:

very much alike	alike	I'm not sure	different	very different

33 _____

Col. #

105. What do you think about John-Boy and Samantha?
Are they:

very much alike	alike	I'm not sure	different	very different

34 _____

106. What do you think about Fat Albert and Gilligan?
Are they:

very much alike	alike	I'm not sure	different	very different

35 _____

107. What do you think about Mary Tyler Moore and Archie Bunker?
Are they:

very much alike	alike	I'm not sure	different	very different

36 _____

108. How old are you? _____

109. What date is your birthday on? _____

110. What grade are you in? _____

111. What is your sex? _____boy

_____girl

APPENDIX D

Subgroup Distance Matrices for Similarity Ratings

The following matrices represent the mean distances between all possible pairs of TV characters used in this study. Distances were calculated separately for each grade and sex.

The distances in these matrices were the values input into the INDSCAL program.

Distance Matrix for Third Grade

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gilligan														
Fat Albert	4.06													
Samantha	4.11	4.58												
Marshal Dillon	3.88	4.20	3.91											
Reed	3.86	4.43	3.59	2.70										
Hawkeye	3.68	4.10	3.86	3.34	3.17									
Laura	4.11	4.44	3.13	3.85	3.76	4.20								
John-Boy	3.74	4.38	4.03	3.86	3.35	3.94	2.92							
Fred Sanford	3.92	3.62	3.86	3.91	3.74	3.53	4.23	4.14						
Chico	3.55	3.91	3.94	3.77	3.35	3.14	4.13	3.70	2.58					
Fred Flintstone	3.70	2.41	4.37	4.20	3.95	4.10	4.41	4.09	3.13	3.85				
Steve Austin	4.23	4.55	3.82	3.73	3.17	3.58	4.41	3.98	4.14	3.70	4.46			
Archie Bunker	4.03	3.32	4.28	3.85	4.00	3.73	4.19	4.13	3.00	3.50	3.04	4.47		
Mary Tyler Moore	4.40	4.29	3.04	4.06	4.04	3.97	2.76	3.80	3.92	4.17	4.13	4.07	3.62	

Distance Matrix for Fifth Grade

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gilligan														
Fat Albert	3.97													
Samantha	3.66	4.47												
Marshal Dillon	4.21	4.31	4.01											
Reed	3.83	4.27	3.53	2.51										
Hawkeye	3.39	3.93	3.75	3.80	3.56									
Laura	4.16	4.39	2.93	3.62	3.81	4.24								
John-Boy	3.72	4.18	3.98	3.47	3.19	3.95	2.51							
Fred Sanford	3.63	3.37	4.01	3.93	4.01	3.06	4.36	4.37						
Chico	3.21	3.69	3.86	3.84	3.53	2.75	4.24	3.93	2.59					
Fred Flintstone	3.54	2.74	4.33	4.07	4.19	3.92	4.37	4.15	3.15	4.03				
Steve Austin	4.24	4.40	3.75	3.39	3.13	3.71	3.80	3.78	4.10	3.89	4.45			
Archie Bunker	4.03	3.59	4.15	4.10	3.93	3.45	4.48	4.27	2.07	2.98	2.72	4.51		
Mary Tyler Moore	4.00	4.16	2.63	3.86	3.62	3.68	2.86	3.47	3.97	3.66	4.13	4.03	4.03	

Distance Matrix for Seventh Grade

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gilligan														
Fat Albert	3.68													
Samantha	3.92	4.27												
Marshal Dillon	4.39	4.24	3.75											
Reed	3.92	4.04	3.44	2.58										
Hawkeye	3.33	3.73	3.63	3.71	3.55									
Laura	3.82	4.14	3.01	3.20	3.49	4.15								
John-Boy	3.81	4.15	3.84	3.20	3.17	4.08	2.30							
Fred Sanford	3.59	3.26	4.20	4.36	3.98	3.27	4.44	4.43						
Chico	3.40	3.65	3.87	4.00	3.31	2.55	4.01	3.92	2.63					
Fred Flintstone	3.26	2.46	4.21	4.24	4.20	3.75	4.56	4.27	2.69	3.79				
Steve Austin	4.18	4.37	3.26	2.88	2.82	3.60	3.66	3.39	4.40	3.82	4.62			
Archie Bunker	3.87	3.46	4.24	4.08	3.97	3.46	4.52	4.31	2.08	3.30	2.46	4.50		
Mary Tyler Moore	4.02	4.14	2.52	3.58	3.31	3.71	2.66	3.07	4.30	3.94	4.27	3.50	4.36	

Distance Matrix for All Females

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gilligan														
Fat Albert	3.94													
Samantha	4.01	4.43												
Marshal Dillon	4.20	4.30	3.98											
Reed	3.93	4.23	3.67	2.68										
Hawkeye	3.67	3.94	3.89	3.64	3.43									
Laura	4.16	4.37	3.24	3.86	3.81	4.22								
John-Boy	3.90	4.33	4.04	3.72	3.48	4.12	2.53							
Fred Sanford	3.86	3.41	4.21	4.15	4.00	3.46	4.52	4.43						
Chico	3.45	3.87	3.91	4.00	3.48	2.87	4.22	3.91	2.90					
Fred Flintstone	3.61	2.67	4.39	4.19	4.27	4.09	4.62	4.30	3.15	4.01				
Steve Austin	4.35	4.51	3.57	3.58	3.18	3.69	4.13	3.85	4.26	3.90	4.60			
Archie Bunker	4.04	3.52	4.37	4.12	4.03	3.81	4.54	4.37	2.44	3.55	2.72	4.52		
Mary Tyler Moore	4.21	4.29	2.82	3.99	3.74	3.84	2.83	3.48	4.19	4.02	4.30	3.96	4.09	

Distance Matrix for All Males

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gilligan														
Fat Albert	3.85													
Samantha	3.77	4.44												
Marshal Dillon	4.11	4.20	3.78											
Reed	3.81	4.26	3.35	2.50										
Hawkeye	3.24	3.90	3.58	3.58	3.42									
Laura	3.88	4.27	2.78	3.21	3.54	4.17								
John-Boy	3.60	4.13	3.84	3.26	2.96	3.85	2.63							
Fred Sanford	3.55	3.43	3.82	3.98	3.81	3.09	4.15	4.18						
Chico	3.31	3.61	3.86	3.72	3.30	2.74	4.02	3.78	2.26					
Fred Flintstone	3.36	2.38	4.21	4.15	3.94	3.73	4.26	4.02	2.81	3.74				
Steve Austin	4.07	4.36	3.65	3.04	2.88	3.56	3.76	3.56	4.17	3.69	4.41			
Archie Bunker	3.89	3.38	4.06	3.89	3.89	3.25	4.24	4.09	2.31	2.94	2.76	4.47		
Mary Tyler Moore	4.06	4.10	2.63	3.65	3.55	3.72	2.68	3.40	3.92	3.82	4.04	3.75	3.91	

APPENDIX E

Group Questionnaire for Unidimensional Measures

Here are some questions about the people and shows on TV. Please read the questions and then put an X on the line above what you think.

The questions are about what you think of people on TV. Here is an example.

How funny do you think Fred Flintstone is?

very funny	funny	not very funny	not funny at all

Your Name: _____ (7-9)

Grade: _____

Room Number: _____

Card 3

Col. #

HERE ARE SOME QUESTIONS ABOUT GILLIGAN ON "GILLIGAN'S ISLAND." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Gilligan's Island?" 10 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Gilligan is? 11 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Gilligan is? 12 ____

very active	active	not very active	not active at all

4. How good looking do you think Gilligan is? 13 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Gilligan is? 14 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Gilligan? 15 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Gilligan is? 16 ____

very good	good	not very good	not good at all

8. How old do you think Gilligan is? 17 ____

very old	old	young	very young

9. How much do the other people on "Gilligan's Island" like Gilligan? 18 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Gilligan? 19 ____

a lot	a little	not very much	not at all

11. Are there things that Gilligan does that you would like to do? 20 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT SAMANTHA ON "BEWITCHED." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Bewitched?" 21 _____

_____	_____	_____	_____
almost always	most of the time	some of the time	not at all

2. How funny do you think Samantha is? 22 _____

_____	_____	_____	_____
very funny	funny	not very funny	not funny at all

3. How active do you think Samantha is? 23 _____

_____	_____	_____	_____
very active	active	not very active	not active at all

4. How good looking do you think Samantha is? 24 _____

_____	_____	_____	_____
very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Samantha is? 25 _____

_____	_____	_____	_____
very strong	strong	not very strong	not strong at all

6. How much like a real person is Samantha? 26 _____

_____	_____	_____	_____
very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Samantha is? 27 _____

_____	_____	_____	_____
very good	good	not very good	not good at all

8. How old do you think Samantha is? 28 _____

_____	_____	_____	_____
very old	old	young	very young

9. How much do the other people on "Bewitched" like Samantha? 29 _____

_____	_____	_____	_____
a lot	a little	not very much	not at all

10. How much do you want to be like Samantha? 30 _____

_____	_____	_____	_____
a lot	a little	not very much	not at all

11. Are there things that Samantha does that you would like to do? 31 _____

_____	_____	_____	_____
a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT MARSHALL DILLON ON "GUNSMOKE." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Gunsmoke?" 32 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Marshall Dillon is? 33 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Marshall Dillon is? 34 ____

very active	active	not very active	not active at all

4. How good looking do you think Marshall Dillon is? 35 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Marshall Dillon is? 36 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Marshall Dillon? 37 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Marshall Dillon is? 38 ____

very good	good	not very good	not good at all

8. How old do you think Marshall Dillon is? 39 ____

very old	old	young	very young

9. How much do the other people on "Gunsmoke" like Marshall Dillon? 40 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Marshall Dillon? 41 ____

a lot	a little	not very much	not at all

11. Are there things that Marshall Dillon does that you would like to do? 42 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT HAWKEYE ON "MASH." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "MASH?" 43 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Hawkeye is? 44 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Hawkeye is? 45 ____

very active	active	not very active	not active at all

4. How good looking do you think Hawkeye is? 46 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Hawkeye is? 47 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Hawkeye? 48 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Hawkeye is? 49 ____

very good	good	not very good	not good at all

8. How old do you think Hawkeye is? 50 ____

very old	old	young	very young

9. How much do the other people on "MASH" like Hawkeye? 51 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Hawkeye? 52 ____

a lot	a little	not very much	not at all

11. Are there things that Hawkeye does that you would like to do? 53 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT FAT ALBERT ON "FAT ALBERT AND THE COSBY KIDS." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Fat Albert and the Cosby Kids?" 54 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Fat Albert is? 55 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Fat Albert is? 56 ____

very active	active	not very active	not active at all

4. How good looking do you think Fat Albert is? 57 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Fat Albert is? 58 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Fat Albert? 59 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Fat Albert is? 60 ____

very good	good	not very good	not good at all

8. How old do you think Fat Albert is? 61 ____

very old	old	young	very young

9. How much do the other people on "Fat Albert and the Cosby Kids" like Fat Albert? 62 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Fat Albert? 63 ____

a lot	a little	not very much	not at all

11. Are there things that Fat Albert does that you would like to do? 64 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT REED ON "ADAM-12." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Adam-12?" 65 ____

almost always	most of the time	some of the time	not at all
_____	_____	_____	_____

2. How funny do you think Reed is? 66 ____

very funny	funny	not very funny	not funny at all
_____	_____	_____	_____

3. How active do you think Reed is? 67 ____

very active	active	not very active	not active at all
_____	_____	_____	_____

4. How good looking do you think Reed is? 68 ____

very good looking	good looking	not very good looking	not good looking at all
_____	_____	_____	_____

5. How strong do you think Reed is? 69 ____

very strong	strong	not very strong	not strong at all
_____	_____	_____	_____

6. How much like a real person is Reed? 70 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all
_____	_____	_____	_____

7. How good do you think Reed is? 71 ____

very good	good	not very good	not good at all
_____	_____	_____	_____

8. How old do you think Reed is? 72 ____

very old	old	young	very young
_____	_____	_____	_____

9. How much do the other people on "Adam-12" like Reed? 73 ____

a lot	a little	not very much	not at all
_____	_____	_____	_____

10. How much do you want to be like Reed? 74 ____

a lot	a little	not very much	not at all
_____	_____	_____	_____

11. Are there things that Reed does that you would like to do? 75 ____

a lot of things	some things	almost nothing	nothing at all
_____	_____	_____	_____

Card 4

Col. #

HERE ARE SOME QUESTIONS ABOUT LAURA ON "LITTLE HOUSE ON THE PRAIRIE." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Little House on the Prairie?" 10 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Laura is? 11 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Laura is? 12 ____

very active	active	not very active	not active at all

4. How good looking do you think Laura is? 13 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Laura is? 14 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Laura? 15 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Laura is? 16 ____

very good	good	not very good	not good at all

8. How old do you think Laura is? 17 ____

very old	old	young	very young

9. How much do the other people on "Little House on the Prairie" like Laura? 18 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Laura? 19 ____

a lot	a little	not very much	not at all

11. Are there things that Laura does that you would like to do? 20 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT JOHN-BOY IN "THE WALTONS." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "The Waltons?" 21 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think John-Boy is? 22 ____

very funny	funny	not very funny	not funny at all

3. How active do you think John-Boy is? 23 ____

very active	active	not very active	not active at all

4. How good looking do you think John-Boy is? 24 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think John-Boy is? 25 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is John-Boy? 26 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think John-Boy is? 27 ____

very good	good	not very good	not good at all

8. How old do you think John-Boy is? 28 ____

very old	old	young	very young

9. How much do the other people on "The Waltons" like John-Boy? 29 ____

a lot	a little	not very much	not at all

10. How much do you want to be like John-Boy? 30 ____

a lot	a little	not very much	not at all

11. Are there things that John-Boy does that you would like to do? 31 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT FRED SANFORD ON "SANFORD AND SON." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Sanford and Son?" 32 _____

_____	_____	_____	_____
almost always	most of the time	some of the time	not at all

2. How funny do you think Fred Sanford is? 33 _____

_____	_____	_____	_____
very funny	funny	not very funny	not funny at all

3. How active do you think Fred Sanford is? 34 _____

_____	_____	_____	_____
very active	active	not very active	not active at all

4. How good looking do you think Fred Sanford is? 35 _____

_____	_____	_____	_____
very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Fred Sanford is? 36 _____

_____	_____	_____	_____
very strong	strong	not very strong	not strong at all

6. How much like a real person is Fred Sanford? 37 _____

_____	_____	_____	_____
very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Fred Sanford is? 38 _____

_____	_____	_____	_____
very good	good	not very good	not good at all

8. How old do you think Fred Sanford is? 39 _____

_____	_____	_____	_____
very old	old	young	very young

9. How much do the other people on "Sanford and Son" like Fred Sanford? 40 _____

_____	_____	_____	_____
a lot	a little	not very much	not at all

10. How much do you want to be like Fred Sanford? 41 _____

_____	_____	_____	_____
a lot	a little	not very much	not at all

11. Are there things that Fred Sanford does that you would like to do? 42 _____

_____	_____	_____	_____
a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT STEVE AUSTIN ON "THE SIX MILLION DOLLAR MAN." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "The Six Million Dollar Man?" 43 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Steve Austin is? 44 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Steve Austin is? 45 ____

very active	active	not very active	not active at all

4. How good looking do you think Steve Austin is? 46 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Steve Austin is? 47 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Steve Austin? 48 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Steve Austin is? 49 ____

very good	good	not very good	not good at all

8. How old do you think Steve Austin is? 50 ____

very old	old	young	very young

9. How much do the other people on "The Six Million Dollar Man" like Steve Austin? 51 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Steve Austin? 52 ____

a lot	a little	not very much	not at all

11. Are there things that Steve Austin does that you would like to do? 53 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT FRED FLINTSTONE ON "THE FLINTSTONES." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "The Flintstones?" 54 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Fred Flintstone is? 55 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Fred Flintstone is? 56 ____

very active	active	not very active	not active at all

4. How good looking do you think Fred Flintstone is? 57 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Fred Flintstone is? 58 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Fred Flintstone? 59 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Fred Flintstone is? 60 ____

very good	good	not very good	not good at all

8. How old do you think Fred Flintstone is? 61 ____

very old	old	young	very young

9. How much do the other people on "The Flintstones" like Fred Flintstone? 62 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Fred Flintstone? 63 ____

a lot	a little	not very much	not at all

11. Are there things that Fred Flintstone does that you would like to do? 64 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT ARCHIE BUNKER ON "ALL IN THE FAMILY." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "All in the Family?" 65 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Archie Bunker is? 66 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Archie Bunker is? 67 ____

very active	active	not very active	not active at all

4. How good looking do you think Archie Bunker is? 68 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Archie Bunker is? 69 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Archie Bunker ? 70 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Archie Bunker is? 71 ____

very good	good	not very good	not good at all

8. How old do you think Archie Bunker is? 72 ____

very old	old	young	very young

9. How much do the other people on "All in the Family" like Archie Bunker? 73 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Archie Bunker? 74 ____

a lot	a little	not very much	not at all

11. Are there things that Archie Bunker does that you would like to do? 75 ____

a lot of things	some things	almost nothing	nothing at all

Card 5

Col. #

HERE ARE SOME QUESTIONS ABOUT CHICO ON "CHICO AND THE MAN." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "Chico and the Man?" 10 ____

almost always	most of the time	some of the time	not at all

2. How funny do you think Chico is? 11 ____

very funny	funny	not very funny	not funny at all

3. How active do you think Chico is? 12 ____

very active	active	not very active	not active at all

4. How good looking do you think Chico is? 13 ____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Chico is? 14 ____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Chico? 15 ____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Chico is? 16 ____

very good	good	not very good	not good at all

8. How old do you think Chico is? 17 ____

very old	old	young	very young

9. How much do the other people on "Chico and the Man" like Chico? 18 ____

a lot	a little	not very much	not at all

10. How much do you want to be like Chico? 19 ____

a lot	a little	not very much	not at all

11. Are there things that Chico does that you would like to do? 20 ____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT MARY TYLER MOORE ON "THE MARY TYLER MOORE SHOW." THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How often do you watch the TV show "The Mary Tyler Moore Show?" 21 _____

almost always	most of the time	some of the time	not at all

2. How funny do you think Mary Tyler Moore is? 22 _____

very funny	funny	not very funny	not funny at all

3. How active do you think Mary Tyler Moore is? 23 _____

very active	active	not very active	not active at all

4. How good looking do you think Mary Tyler Moore is? 24 _____

very good looking	good looking	not very good looking	not good looking at all

5. How strong do you think Mary Tyler Moore is? 25 _____

very strong	strong	not very strong	not strong at all

6. How much like a real person is Mary Tyler Moore? 26 _____

very much like a real person	like a real person	not very much like a real person	not like a real person at all

7. How good do you think Mary Tyler Moore is? 27 _____

very good	good	not very good	not good at all

8. How old do you think Mary Tyler Moore is? 28 _____

very old	old	young	very young

9. How much do the other people on "The Mary Tyler Moore Show" like Mary Tyler Moore? 29 _____

a lot	a little	not very much	not at all

10. How much do you want to be like Mary Tyler Moore? 30 _____

a lot	a little	not very much	not at all

11. Are there things that Mary Tyler Moore does that you would like to do? 31 _____

a lot of things	some things	almost nothing	nothing at all

Col. #

HERE ARE SOME QUESTIONS ABOUT YOURSELF. THINK ABOUT THEM AND THEN PUT AN X ON THE LINE ABOVE WHAT YOU THINK.

1. How funny do you think you are? 32 _____

very funny	funny	not very funny	not funny at all

2. How active do you think you are? 33 _____

very active	active	not very active	not active at all

3. How good looking do you think you are? 34 _____

very good looking	good looking	not very good looking	not good looking at all

4. How strong do you think you are? 35 _____

very strong	strong	not very strong	not strong at all

5. How much do you think you are like other people? 36 _____

a lot	a little	not very much	not at all

6. How good do you think you are? 37 _____

very good	good	not very good	not good at all

7. How old do you think you are? 38 _____

very old	old	young	very young

8. How much do other people like you? 39 _____

a lot	a little	not very much	not at all

9. How old are you _____

10. What date is your birthday on? _____

11. What grade are you in? _____

12. What is your sex? _____boy

_____girl

APPENDIX F

Mean Scores for Fourteen Television Characters on Eight Unidimensional Attributes[a]

Character Name	Funny	Active	Good Looking	Strength	Reality	Good	Age	Support
Gilligan	3.53	3.27	2.44	1.78	2.70	3.17	1.94	3.35
Fat Albert	3.03	2.72	1.71	2.80	2.24	2.90	1.74	3.61
Samantha	2.58	3.11	3.17	2.66	2.11	3.20	2.28	3.59
Marshal Dillon	1.74	3.27	2.60	3.21	3.11	3.18	2.99	3.58
Reed	2.09	3.39	3.12	3.19	3.39	3.39	2.22	3.67
Hawkeye	3.49	3.24	2.93	2.87	3.18	3.27	2.34	3.45
Laura	2.36	3.09	2.73	2.11	3.32	3.28	1.33	3.80
John-Boy	2.12	3.09	2.54	2.93	3.19	3.25	2.12	3.77
Fred Sanford	3.46	2.70	2.11	2.39	2.99	3.07	3.36	3.42
Chico	3.24	3.32	3.17	3.08	3.22	3.35	2.12	3.55
Fred Flintstone	3.10	2.82	2.08	2.54	2.15	2.86	2.82	3.37
Steve Austin	2.34	3.73	3.60	3.83	2.51	3.54	2.27	3.65
Archie Bunker	3.24	2.78	2.10	2.52	3.06	2.96	3.11	3.31
Mary Tyler Moore	2.84	3.06	3.19	2.31	3.25	3.30	2.26	3.66

[a]All scale items ranged from 1 to 4. The higher values indicate the attribute was most applicable.

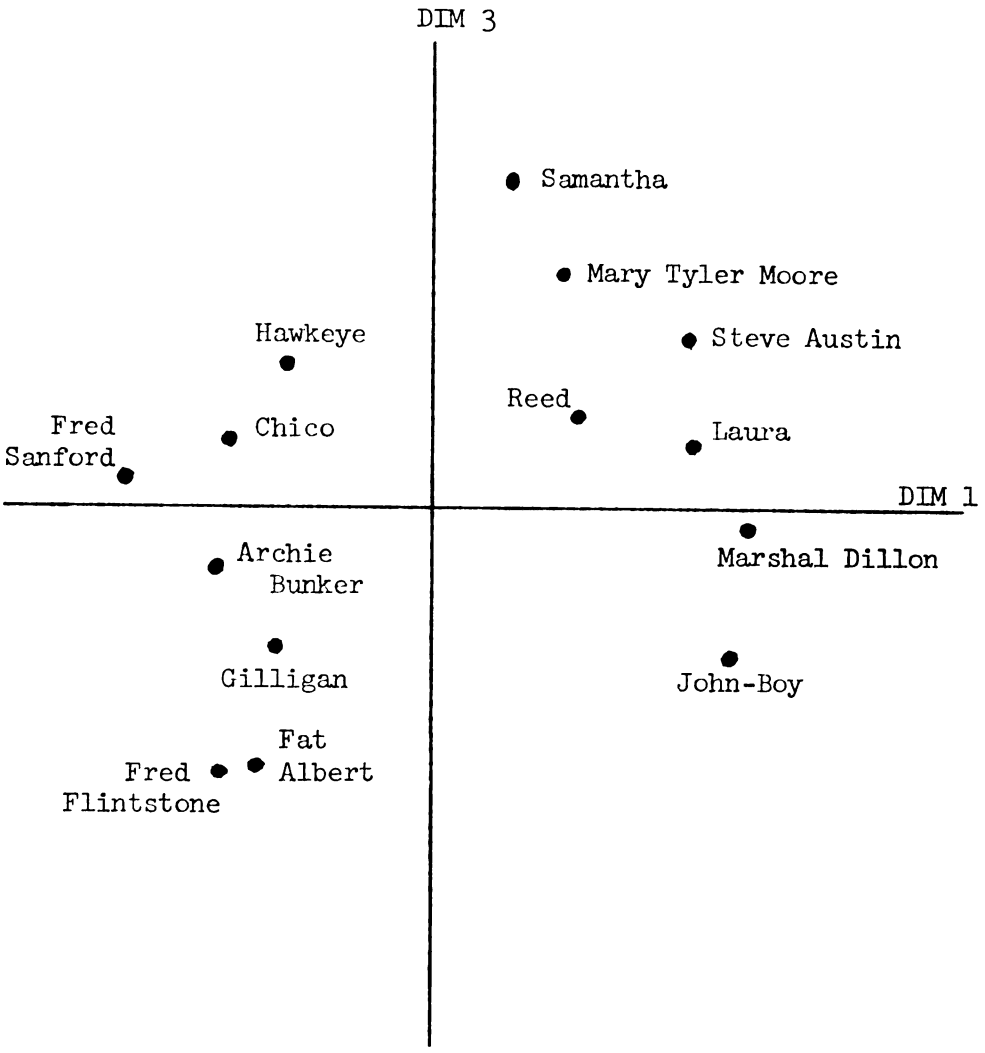
APPENDIX G

Plots of Two-Dimensional Comparisons of Fourteen Television Characters (Total Sample)

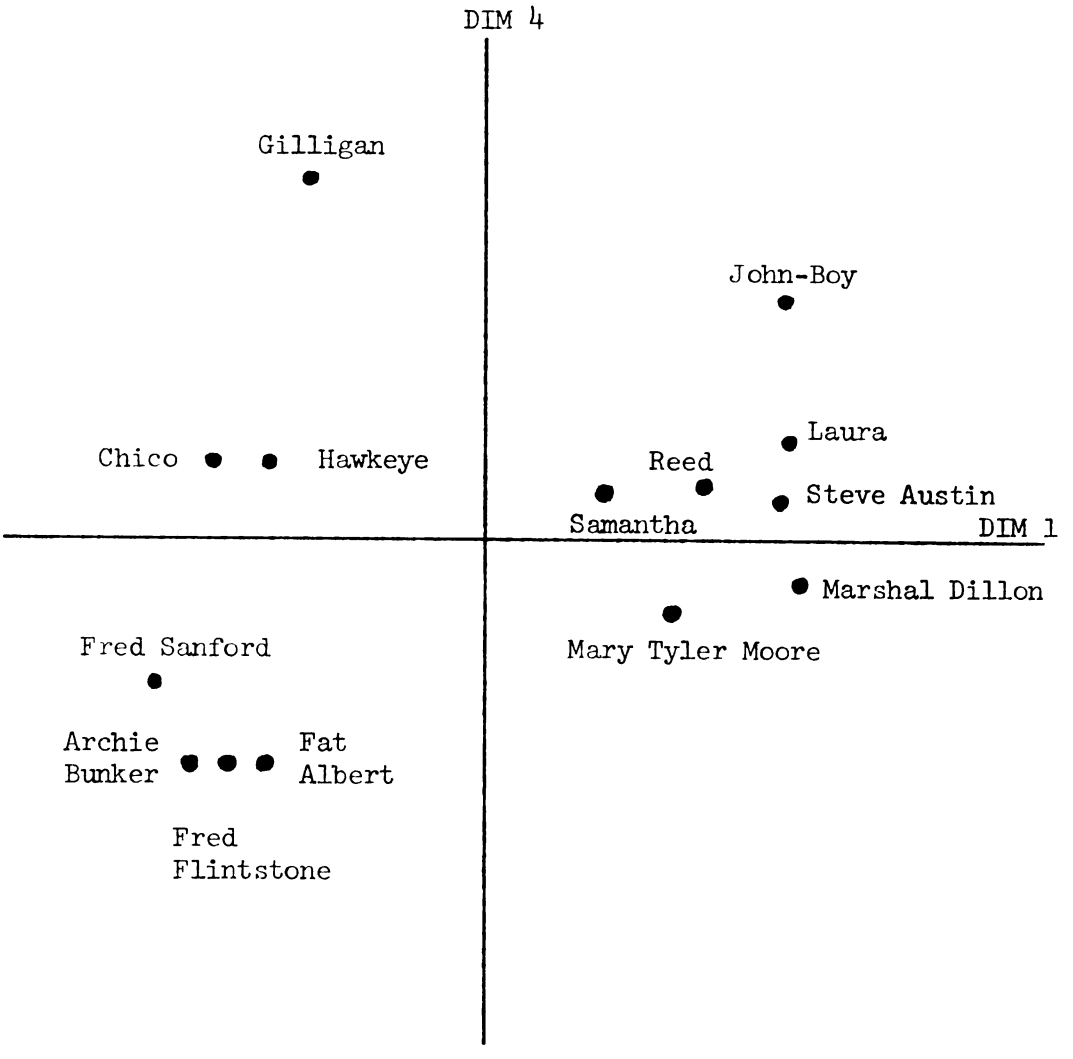
The plots represent all two-dimensional comparisons not presented in Chapter 3.

The INDSCAL program does not compute totally orthogonal dimensions. The dimensions in the following graphs are drawn as orthogonal for clarity of presentation. The correlations between the dimensions are in Table 2.

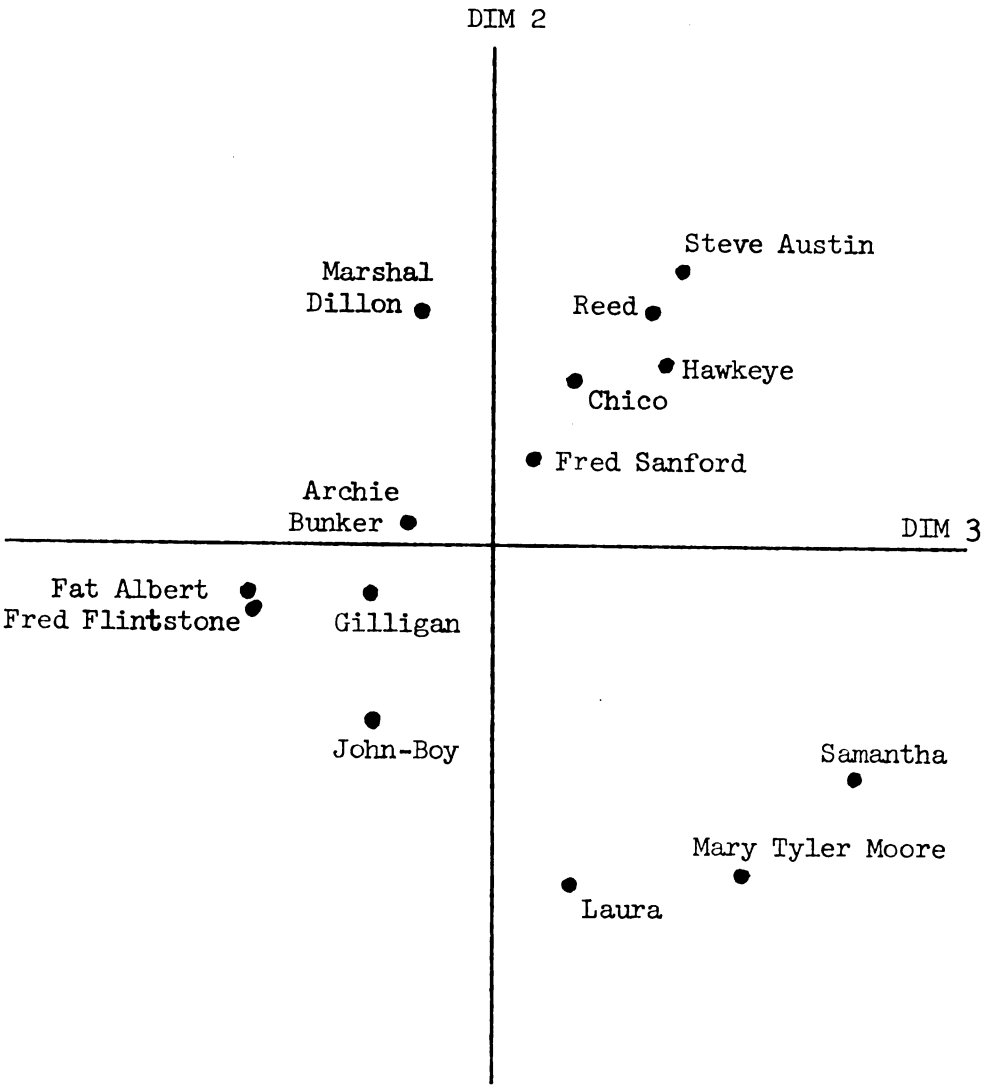
Dimension 1 and Dimension 3



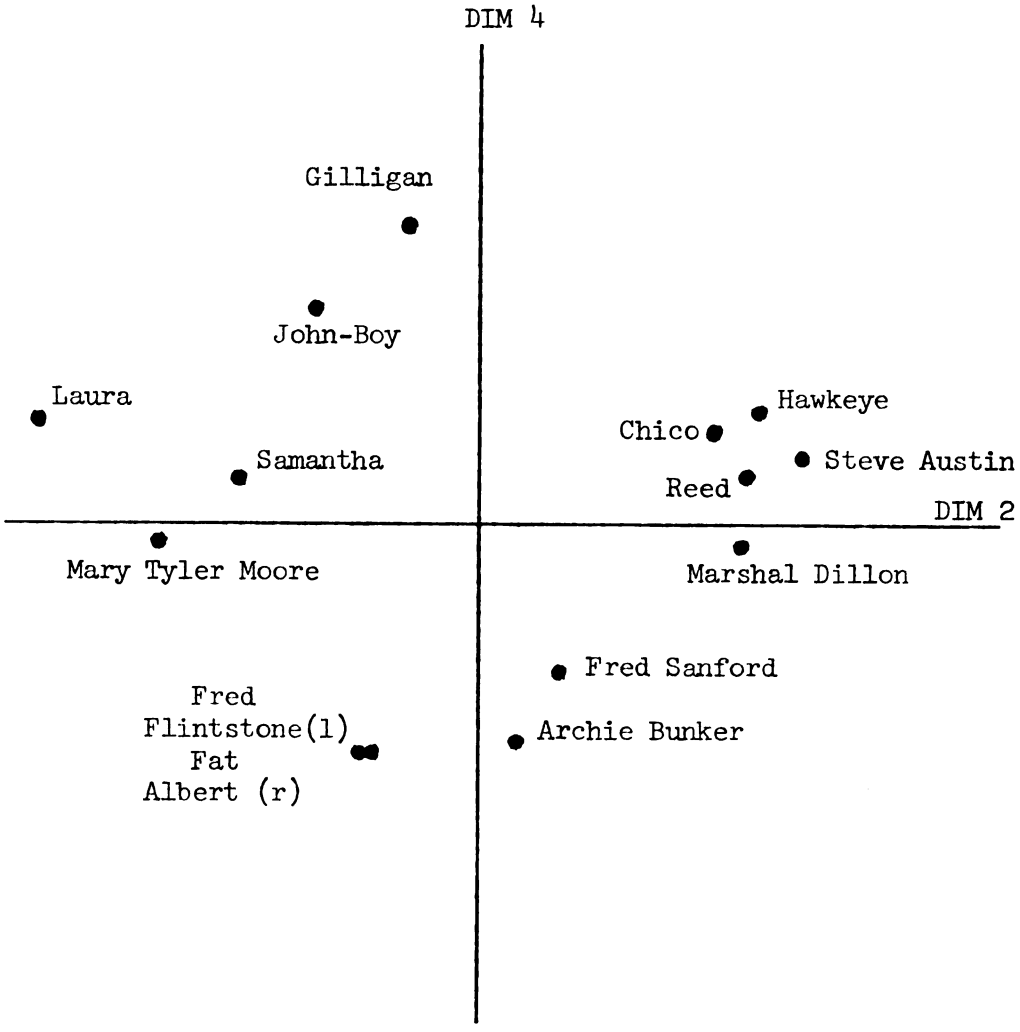
Dimension 1 and Dimension 4



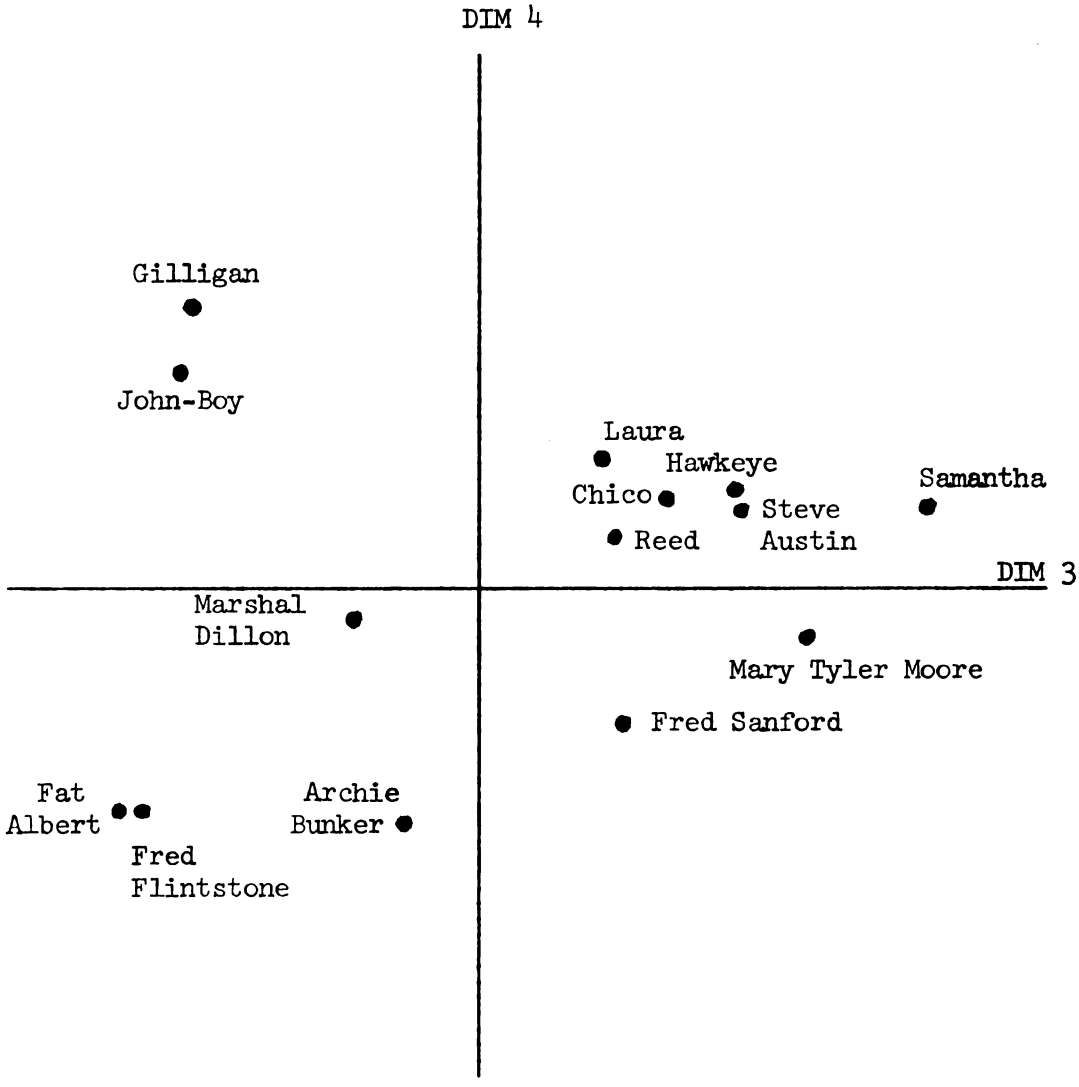
Dimension 2 and Dimension 3



Dimension 2 and Dimension 4



Dimension 3 and Dimension 4



APPENDIX H

INDSCAL Coordinates for Fourteen Television Characters on Four Dimensions (Total Sample)[a]

	DIM 1	DIM 2	DIM 3	DIM 4
Gilligan	-.238	-.597	-.268	+.468
Samantha	.108	-.308	+.486	+.081
Marshal Dillon	.344	+.300	-.033	-.042
Hawkeye	-.191	+.266	+.196	+.145
Fat Albert	-.172	-.056	-.454	-.407
Reed	.247	+.298	+.068	+.106
Laura	.325	-.485	+.066	+.193
John-Boy	.299	-.180	-.263	+.354
Fred Sanford	-.372	+.113	+.051	-.257
Steve Austin	.296	+.353	+.225	+.077
Fred Flintstone	-.255	-.066	-.437	-.379
Archie Bunker	-.309	+.033	-.068	-.410
Chico	-.263	+.222	+.108	+.142
Mary Tyler Moore	.180	-.431	+.322	-.073

[a]The dimensions are normalized so that the sum of the squared coordinates on each dimension equals 1.00.

APPENDIX I

Zero Order Correlations Between Nine Unidimensional Ratings of Television Characters for Each Grade and Sex

Appendix I contains the zero order correlations between the nine unidimensional rating for each grade and sex.

There correlations are based on the mean rating of each of fourteen TV characters on nine attributes. The n for the correlations is therefore, fourteen, the number of TV characters. The mean value of each attribute for each character is, however, collapsed across subjects. The attribute value for each character is then based on the number of subjects in the subroups.

Zero Order Correlations for Third Grade Among Nine Unidimensional Ratings of Fourteen Television Characters

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.27	-							
3	Good looking	-.35	.74**	-						
4	Strength	-.43	.68*	.50	-					
5	Reality	-.27	.07	.20	-.01	-				
6	Good	-.46	.75**	.87**	.54*	.41	-			
7	Age	.14	-.02	-.12	.23	.01	-.14	-		
8	Support	-.48	.06	.24	.21	.19	.29	-.56*	-	
9	Sex (of character)	-.23	-.27	.25	-.43	-.06	.07	-.38	.26	-

*p<.05
**p<.001

Zero Order Correlations for Fifth Grade Among Nine Unidimensional Ratings of Fourteen Television Characters

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.44	-							
3	Good looking	-.33	.84**	-						
4	Strength	-.55*	.43	.25	-					
5	Reality	-.22	.37	.25	.01	-				
6	Good	-.38	.83**	.85**	.34	.38	-			
7	Age	.11	-.23	-.31	.13	-.10	-.42	-		
8	Support	-.70*	.53*	.41	.29	.32	.55*	-.59*	-	
9	Sex (of character)	-.13	-.05	.38	-.42	.00	.21	-.44	.26	-

*p<.05
**p<.001

Zero Order Correlations for Seventh Grade Among Nine Unidimensional Ratings of Fourteen Television Characters

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.28	-							
3	Good looking	-.22	.82**	-						
4	Strength	-.43	.54*	.56*	-					
5	Reality	.01	.27	.32	-.01	-				
6	Good	-.14	.86**	.88**	.47	.59*	-			
7	Age	.16	-.43	-.27	-.02	-.04	-.36	-		
8	Support	-.66*	.32	.49	.32	.30	.50	-.42	-	
9	Sex (of character)	-.17	.05	.35	-.28	.07	.19	-.33	.61*	-

*p<.05
**p<.001

Zero Order Correlations for Males Among Nine
Unidimensional Ratings of Fourteen Television Characters

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.44	-							
3	Good looking	-.38	.77**	-						
4	Strength	-.36	.73**	.50	-					
5	Reality	-.22	.22	.20	.07	-				
6	Good	-.42	.84**	.84**	.57*	.45	-			
7	Age	.15	-.13	-.09	.19	.01	-.20	-		
8	Support	-.82**	.40	.29	.38	.31	.54*	-.44	-	
9	Sex (of character)	-.29	-.37	.08	-.55*	-.14	-.15	-.39	.17	-

*p<.05
**p<.001

Zero Order Correlations for Females Among Nine Unidimensional Ratings of Fourteen Television Characters

		1	2	3	4	5	6	7	8	9
1	Funny	-								
2	Active	-.25	-							
3	Good looking	-.23	.88**	-						
4	Strength	-.56*	.43	.49	-					
5	Reality	-.09	.29	.34	-.02	-				
6	Good	-.24	.88**	.95**	.40	.49	-			
7	Age	.15	-.40	-.32	.05	-.09	-.39	-		
8	Support	-.53*	.37	.55*	.31	.30	.59*	-.64*	-	
9	Sex (of character)	-.06	.21	.48	-.19	.14	.45	-.38	.62*	-

*p<.05
**p<.001