

COGNITIVE STYLE ORIENTATIONS AS PREDIC-
TORS OF SOCIAL SENSITIVITY SKILLS
AMONG GIFTED ELEMENTARY STUDENTS

By

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CHAPTER I

THE RESEARCH PROBLEM

Introduction

Insightful educators have long recognized the influence of socialization upon the teaching-learning process. Research has documented this commonly held belief by providing data which appear to show significant relationships between effective use of social skills and achievement (Austin & Draper, 1984; Buchanan, et al, 1976), classroom behavior (Harris & King, 1982), and positive teacher-student interaction (Cairns, 1983). Further research which indicates effective social interactions foster a healthy positive self-concept (Coleman & Fults, 1982) and supports a positive relationship between self-esteem and achievement. (Patten, 1983) emphasizes the importance of recognizing and enhancing the role of social skill development in the educational process.

The ability to perceive, comprehend, and effectively utilize interpersonal cues in a social context is the foundation for the development of effective social skills. Rothenberg (1970) labels this ability "social sensitivity". It facilitates positive interactions between individuals, generating a spiralling, reciprocal effect (Marcus, 1980),

thus forming the basis for prosocial and altruistic behaviors and promoting inter- and intra-group harmony. Other positive effects of social sensitivity, such as social understanding, moral development, sharing, helping, comforting, self-esteem, and positive interpersonal relationships (Ridley, 1982) have also been identified.

Because of its inherent personal and social implications, social sensitivity appears to be an important phenomenon to identify and foster within individuals. As such, precursors and correlates of social sensitivity also need to be identified, as well as manifestations of individual differences in and among different populations. Recent research has focused on the identification, correlates, and development of social sensitivity in children and adolescents (DeMarsh, 1983; Dodge, 1982; Gottman, 1975; Kurdek, 1982; McGuire, 1982; Mullis, 1983; and Rothenberg, 1970) and identified a wide variation of differences apparently related to a number of status variables such as age, intellectual abilities, and gender, as well as cognitive style orientations such as field dependence/independence. It is the latter dimension that is the focus of the present study.

Psychological differentiation or field dependence/independence has been identified as a consistent correlate to several constructs with educational and social implications, including performance on intelligence tests (Goodenough & Karp, 1961), memory (Messick & Damarin, 1964),

attention (Ruble & Nakamura, 1972), method of instruction and course content (Witkin, et al, 1977), and social compliance (Solar, et al, 1969). As such, its usefulness as a predictor of certain learning and social behaviors of students should be investigated so that more effective use of time and resources can be made in identifying student needs and the development of appropriate programming, whether in the cognitive or social domains.

Statement of the Problem

Information regarding field dependence/independence and social sensitivity would be particularly helpful in planning for the diverse educational and social needs of special student populations. One such population is that of gifted students whose "claim to fame" has centered on intellectual and academic prowess. Until recently, little attention concerning their social/emotional needs has been given these children, with apparent past content with the notion that gifted children should be equally capable in those aspects of their lives as well. With the advent of a group identity and recent legislative mandates to provide educational programming commensurate with their special abilities and needs, gifted children are now being studied to determine how best to meet those needs and maximize their potential abilities and contributions. Such efforts have raised some questions about the nature and implication of giftedness, particularly the notion of gifted pluralities (Abroms &

Gollin, 1980). Do gifted children demonstrate above-average capabilities in several areas, including social/emotional abilities? And how do giftedness and cognitive style relate to the development of social sensitivity skills? These questions have only been partially addressed in the existing literature, with mixed results, and not with latency-age gifted children, when the effects of psychosexual development and gender-role expectations are presumed to be less confounding. Therefore, the purpose of this study is to examine the field dependence/independence orientations among gifted elementary school-aged students and their relationship, if any, to manifestations of social sensitivity, specifically ratings of peer relationships, social competence, and sociometric status.

Limitations

This study acknowledges the limited generalizability of its results to gifted students from similar communities who were identified as gifted in a similar manner. Because of the characteristics of the sample, all age groups could not be sufficiently represented; therefore, the results are limited in their interpretation regarding developmental trends. The instruments used were standardized on heterogeneous samples which limits their predictive value for special populations, such as gifted students, given the restricted range of their abilities. This study further acknowledges the possibility of the existence of measurement

errors, such as fatigue, attitude, motivation, rapport, anxiety, and attention span which may have influenced fluctuations in scores.

Statement of Research Hypothesis

1. There is a statistically significant relationship between the independent variables of field dependence/independence and gender and the dependent variable of social sensitivity. Field dependence/independence is operationally defined as scores on the Children's Embedded Figures Test. A linear combination of scores for social competence, peer relationships, and sociometric status define the construct social sensitivity, and are assessed by the Child Behavior Checklist, Behavior Rating Profile, and a sociogram, respectively.

CHAPTER II

REVIEW OF LITERATURE

Field Dependence/Independence

The basis for research on field dependence/independence evolved from laboratory experiments conducted by Herman Witkin and others in the 1950's to determine the differences among individuals in their ability to locate the upright position from the orientation of the body and the visual field. Using various mechanical apparatus, the researchers tilted either the subject, a visual stimulus, or both and directed the subject to identify the upright position. Two distinct perceptual styles, based upon the performance of those who could locate the upright of 0 degrees tilt, regardless of what the visual field might suggest, and those who identified the upright in relation to the visual field, were identified. These different cognitive styles were labeled field independence and field dependence, respectively, alluding to the differing abilities to overcome or be independent of the influences of the background, or field (Witkin, 1977).

A similar phenomenon was observed when subjects were asked to locate a simple geometric design located within a more complex figure, the forerunner of the embedded figures

tests used today. The amount of time the subject required to locate the "hidden" figure was thought to be an indicator of how easily he/she could disregard the field and accurately complete the task, thus replicating the results of the mechanical rod-and-frame experiments in the laboratory. These findings were replicated for other sensory modalities as well -- auditorially, there were significant differences in abilities to locate a simple tune within a complex melody, and to locate a raised figure within a more complex design, through touch (Axelrod & Cohen, 1961). Because subjects consistently demonstrated a field independent or field dependent style across different types of tasks using different modalities, this expression of cognitive style was proved to be a very stable and self-consistent trait (Fatererson & Witkin, 1970).

Perceptual Implications

The implications of Witkin's work extend to areas other than perception. Field dependence/independence is also reflected in making discernments with symbolic representations, such as in verbal and thinking processes. Field independence requires the ability to keep an item separate from its background, and depends on internal structuring and analysis; thus, a field independent individual is likely to impose structure upon a field and analyze items as discrete from it. Those individuals who have difficulty with this type of perceptual processing, Field Dependents, are likely

to have difficulty processing verbal information in a problem-solving method which requires discerning an element out of context and manipulating it in a unique fashion (Witkin, 1977). Field Dependents are more likely to view the field globally and maintain its given organization, structured or not. These distinctly different styles, when applied to problem-solving and other intellectual activities, yield distinctly different results. Field dependence/independence is, in fact, a bipolar concept. The value or cost of being one or the other depends very much upon the circumstances under which the difference is examined (Witkin, 1977).

Interpersonal Implications

This comparison becomes readily apparent by reviewing the assets and liabilities of each orientation and how each is manifested in important areas of life. An area which has received considerable attention is that of interpersonal behavior as it is related to field dependence/independence. Witkin & Goodenough (1977) viewed the differentiation of self from nonself as a form of psychological differentiation which is represented in a number of interpersonal behaviors. While Field Independents use themselves as primary referents, Field Dependents rely on the field to provide contextual clues for meaning, both in perception and social behavior. Field Independents behave in a more socially autonomous fashion, requiring very little feedback from

others to organize meaning into situations. They, instead, impose structure and meaning from an internal reference. Field Dependents, however, rely a great deal on the "field" of others' behaviors, both verbal and nonverbal, in order to make situations meaningful for themselves. This reliance fosters the use of what has been termed a "sensitive radar system, selectively attuned to social components of the environment." (Witkin, 1977, pg. 10). This give Field Dependents a social orientation which can be very useful in some types of problem-solving situations, such as when group consensus is needed. Other types of problem-solving, particularly when analysis and restructuring is required, may be more difficult for them.

Vocational Implications

As people are prone to self-select into circumstances which are psychologically comfortable for them, it is not surprising to learn that Field Dependents "show a strong interest in people, prefer to be physically close to others, are emotionally open, and favor real-life situations that will bring them into contact with people; in contrast, field independent persons are less interested in people, show both physical and psychological distancing from others, and favor impersonal situations." (Witkin, 1977, p. 672). These self-selections are readily apparent in career interests and decisions. Field Independents are likely to begin exploration in, and eventually decide upon, careers which

capitalize on their analytical and organizational skills -- and which do not emphasize interpersonal skills to any great extent. These choices include mathematician, physicist, chemist, biologist, architect, and engineer, as well as production manager, carpenter, farmer, forest service, and mechanic (Pierson, 1965). As expected, Field Dependents expressed career interests and actual choices center on occupations which not only require but heavily emphasize effective interpersonal skills, such as social worker, minister, rehabilitation counselor, probation officer, elementary school teacher, and administrators. These interests and choices have been re-analyzed using the categories of analytical-nonanalytical and impersonal-interpersonal to differentiate expressed career interests of Field Independents and Field Dependents (Clar, 1971). Again, the results reveal two striking relationships, with significant positive correlations between the impersonal-analytical category (chemist, mathematician, biologist, engineer, physicist, and artist) and field independence, and a significant negative correlation between the interpersonal-nonanalytical category (social worker, personnel director, business-education teacher, chamber of commerce director, credit manager, and community recreation director) with field dependence, which is considered a low score on the field independence measure, hence the negative correlation. Even within -occupation differences have been examined for the effects of field dependence/independence differences and were summarized by Witkin (1977) in the following table:

TABLE I
 WITHIN-OCCUPATION DIFFERENCES BASED
 ON FIELD DEPENDENCE/INDEPENDENCE

FIELD DEPENDENT	FIELD INDEPENDENT
Clinical psychology	Experimental psychology
Psychiatric nursing	Surgical nursing
Psychiatric practice favoring interpersonal relations with patients	Psychiatric practice favoring impersonal forms of therapy
Business personnel director	Business production manager
Business educator	Natural science teacher
Social studies teacher	Industrial arts teacher
Art students with informal style	Art students with formal style

Cognitive Implications

Field independence/dependence has been studied in relation to several cognitive constructs, including intellectual functioning. Goodenough & Karp (1961) reviewed the relationship between performance on the Wechsler Intelligence Scale for Children and performance on standard tests of field independence. When the intelligence test was analyzed according to its three major factors, verbal comprehension, attention-concentration, and spatial-perceptual, it was found that the embedded figures test loaded heavily on the third factor - spatial-perceptual, and thus

supported the hypothesis that optimum performance on intelligence tests which include subtests of that nature, also requires the ability to overcome embeddedness, a perceptual skills. If this is so, then Field Dependents may perform less well on such IQ measures than Field Independents, for reasons of differences in perceptual ability.

In studies of memory and attention, Field Dependents and Field Independents demonstrated differing abilities, according to the nature of the content and the degree of task relevance. Field Dependents showed consistently higher abilities in memory for material with a social orientation and Field Independents a better memory for neutral content. But both Field Dependents and Field Independents showed a marked preference for memory and attention to task-relevant material over irrelevant content (Eagle, et al, 1969, Fitzgibbons & Goldberger, 1971).

Educational Implications

In addition to intelligence, memory, and attention, achievement behavior has also been assessed concurrently with field dependence/independence in order to determine the relationship, if any, between achievement behaviors (defined as concerned with mastery of fine motor skills, task persistence, time alone on task, and independent achievement efforts of young children in free play situations) and field dependence/independence. Such behaviors were found to

correlate significantly and positively with field independence scores (Crandall & Sinkeldam, 1964). It suggested that, when given a choice, field independent children engage in more achievement related behavior than in socialization activities, such as group play and games. This is supported by studies in task vs. social orientation which concluded that Field Independents were more task oriented and less responsive to social cues, even those which may have been helpful in performing the task (Ruble & Nakamura, 1972). Various socialization factors and their relation to field dependence/independence have also been examined. It was found that as young as four years of age, Field Independents and Field Dependents showed marked differences in free play choices, the former opting for non-social play activities, such as playing alone at a block corner or table with paints, bead-stringing, and puzzles, while their field dependent counterparts preferred playing with others at a doll corner, block corner, or games table (Coates, et al, 1975). Field Dependents have also demonstrated a better memory for faces (Messick & Damarin, 1964) as well as being more socially compliant. In the latter instance, the researchers designed an experiment in which subjects were matched in all important variables except field dependence/independence, and were paired into dyads to perform a task in which both accuracy and cooperation were stressed in the directions given as essential to successfully complete the task. A post-experimental questionnaire revealed that Field

Dependents placed more emphasis on the cooperation aspect of the directions while Field Independents reported the opposite emphasis. Thus, Field Dependents were more likely to yield to the opinions of the Field Independents in order to cooperate, and Field Independents were more likely to adopt an active, manipulative role in the task in order to be more accurate (Solar & Davenport, 1969).

Intrapsychic Implications

Personality dimensions which have been analyzed in comparison to field independence/field dependence include use of defense mechanisms, self-disclosure, and external directedness. Thilevilch and Gleser (1971) examined the nature of the defense mechanisms utilized by Field Dependents and Field Independents. They concluded that Field Dependents relied on global defenses such as denial, repression, and turning-against-self, while Field Dependents used differentiated defenses, such as isolation, turning-against-objects, and projections. Self disclosure, which is presumed to occur primarily in social interactions, was hypothesized to be greater for Field Dependents than Field Independents by Sausa-Poza, et al, (1973) based on Witkin's assumption that "one may infer that a high degree of self-disclosure in the communicative behavior in Field Dependents may reflect an attempt to reinforce their less intrinsic sense of self." (Witkin, 1973, p. 767). They obtained significantly higher scores for Field Dependents on the

Jourard Self-Disclosure Questionnaire. Finally, Konstadt and Forman (1965) studied the reactions of field independent and field dependent children to approval/disapproval conditions during a clerical task and found that "subjects with a global field approach exhibited a greater sensitivity to the human environment as reflected by their pronounced reaction to experimentally introduced changes therein... We interpret this as an attempt by them to monitor their behavior in terms of external cues." (p. 492).

In summary, field dependence/independence has been studied extensively in terms of its social and educational implications and appears to be a fairly stable predictor of certain behaviors including those which appear to be manifestations of social sensitivity, such as social compliance, attention to social cues, and self disclosure. One would expect a positive relationship between field dependence and social sensitivity and an inverse relationship between field independence and social sensitivity, given the differences in manifest social behaviors between the field dependent persons and field independent persons outlined in previous research.

Social Sensitivity

Definitions

Social sensitivity, described by Rothenberg (1970) as the ability to accurately perceive and comprehend the behavior, feelings, and motives of others, is felt to be the

basis for several important psychological and social phenomena, including the development of self concept, role acquisition, and the formation of inter and intra-group relationships (Rothenberg, 1970). Individuals with highly developed social sensitivity are also able to apply this ability toward initiating friendships, communicating effectively, monitoring their social impact, and matching social skills to the demands of a particular situation (Asher & Renshaw, 1981; Gottman, et al, 1975). Several other related terms have been coined to describe similar phenomena, such as interpersonal sensitivity -- defined as "the ability to perceive and differentiate the behavioral interactions between others including the ability to perceive the emotions of others; the ability to perceive nonverbal cues and make inferences from them; the ability to perceive incongruities, both verbal and nonverbal; the ability to perceive veiled intentions of others, the ability to perceive defensiveness; the ability to perceive insensitivity, and the ability to perceive effective communication skills." (Richie & Bernard & Shertzler, 1982, p. 106). Another similar term is social cognition -- the way one conceptualizes others, makes inferences about their inner experiences, and understands the thoughts, emotions, intentions, and viewpoints of others (Shantz, 1975). Similarly Feshbach's tri-component model of empathy, conceptualized as the ability to discriminate an emotional state in another, the ability to take on the perspective and role of another,

and the ability to respond effectively (Feshbach, 1984) can also be seen to encompass social sensitivity. All of these terms involve the ability to perceive and understand, cognitively and intuitively, verbal and nonverbal cues during interpersonal interactions.

Correlations and Manifestations

As a phenomenon of major psychological and social importance, social sensitivity and its variations have been closely examined in respect to their relationship to mediating factors such as age, intellectual ability, and interpersonal adjustment, all of which were identified to be major contributors to the development of social sensitivity (Rothenberg, 1970). Manifestations of social sensitivity such as popularity and peer acceptance were found to correlate with social self-competence and interpersonal understanding (Gottman, et al, 1975; Kurdek & Knile, 1982). Children who were able to form close friendships also displayed high levels of affective perspective-taking and altruism (McGuire & Weisz, 1982).

The consequences of impaired social sensitivity have also been examined. Deficiency in social role-taking skills was found as a contributory factor in a study of aggressive boys (Chandler, 1973). Other studies suggested that a social-cognitive bias may also be found in aggressive boys, who consistently misinterpreted the motives of others, often erroneously attributing hostile intentions to them (Dodge &

Frame, 1982). Social isolation which may be construed as a result of deficiency in social sensitivity and its attendant social skills manifests itself in the creation of "invisible children" described as those who "tend to be marginal in their interpersonal relationships... neither actively disliked... nor actively liked." (Byrnes & Yamato, 1983, p. 18) and who may therefore become lost, neglected or ignored by the mainstream. Social isolation has also been described as a basis for a number of factors contributing to a high suicide rate (Gottman, et al, 1975).

Assessment

The techniques most commonly used to assess social sensitivity are divided among perspective-taking tasks (Abrams & Gollin, 1980; DeMarsh & Adams, 1983; Feshbach, 1984), affect identification/matching tasks (DeMarsh & Adams, 1983; Gottman et al, 1975; Kurdek & Krile, 1982; Marcus & Telleen, 1979, Rothenberg, 1970) and sociometric techniques, including peer nominations, parent and teacher ratings, and self reports (Austin & Draper, 1981; Byrnes & Yamamoto, 1983; Gallagher & Crowder, 1957; Gottman et al, 1975; Harris & King, 1982; & Rothenberg, 1970) or tasks combining these three types of assessment.

Gifted Children

Concerns for Socialization

Gifted children have been the subjects of intense interest since the days of Plato who called them "children of gold." While the emphasis on educational responsibilities for these children is understandable, recent research efforts have also focused on their social-emotional needs as well. Freeman (1979) identified two areas of "vulnerability" for gifted children. One was heightened sensitivity, which may cause the gifted child to be overly responsive to criticism and perhaps develop a negative self-concept which can result in social isolation. In assessing the educational implications of self concept formation, Whitmore (1980) observed that: "Negative self concepts are the central trait distinguishing underachievers from those who are achieving commensurate with their ability." (p. 72). He further linked self concept to peer relations by pointing out that a child's self concept is a composite of numerous self images, including the social self, or how others perceive and respond to him or her. Children with such extraordinary ability to assimilate information may be hampered socially in another way, because acute perception on the basis of little experience can also result in misinterpretation of signals, interfering with the development of socialization skills (Freeman, 1979). Another area of concern expressed by Freeman was that of

unrealistic expectations particularly by the parents and other adults in the child's life, who often expect giftedness to be demonstrated in all areas of the child's make-up, but who, at the same time, emphasize intellectual and academic pursuits for the child, sometimes to the exclusion of activities which might foster the development of social and emotional skills. Such overemphasis could produce a constricted orientation to life, a "crippling" sense of superiority and alienation from other children (Hollingworth, 1942). One example of such an effect is found when gifted children feel "different" than their age-mates. The resulting negative self-esteem affects peer relationships which in turn perpetuates the lowered self-worth (Gallager, et al, 1960). Self esteem has been found to be related to successful social relationships (Coleman, et al, 1977), and underachieving gifted children have been found to have lower self-esteem (Saurenman & Michael, 1980). Since there is insufficient data to support a causal relationship at this point, one may speculate as to the direction of the relationship.

Intellectual vs. Social Giftedness

Two recent studies give support to the concept of "gifted pluralism" -- that social giftedness is separate from intellectual giftedness, and that individuals may possess one without the other (Abroms & Gollin, 1980). Richie, et al, (1982) found that high levels of academic

achievement, usually associated with high intelligence, did not correlate significantly with interpersonal sensitivity. Abroms and Gollin (1980) also identified only a marginal correlation between intellectual ability and social cognitive role-taking skills among preschoolers. These studies seem to indicate that social sensitivity may be distributed throughout the population independent of other abilities, such as intelligence.

This position is further supported by Shure & Spivak (1972) who found only a minimal relationship between IQ and interpersonal cognitive problem-solving skills, which involve sensitivity to human problems, although Knepper, et al, (1983) found an increased correlation between the two with older, gifted children, and found this relationship was consistent for both verbally-gifted and quantitatively-gifted children. But there are other indications that gifted children do not necessarily have above average or even average success in establishing peer relationships which in part depends upon social sensitivity abilities. Gallager & Crowder (1957) used a sociometric device based on friendship choices in their study of gifted children and found a sizeable minority that were not doing well socially. Reviewing studies of gifted children's peer relationships, Austin & Draper (1981) concluded that while gifted children may develop social knowledge at an earlier age, it may or may not be manifested in high levels of social behavior. And further, that gifted children interact significantly

less often with their chronological peers, preferring the company of older children and adults. They stated: "Despite the fact that in all these popularity studies... the sociometric questions and social data focused on friendship choices rather than academic working companions, it is still uncertain whether the gifted were chosen for specific friendship traits or because they represented dominant academic values." (p. 30) Thus, the overall development and effective use of social sensitivity skills among gifted children remains relatively unclear.

CHAPTER III

METHODOLOGY

Sample Description

Basis for Selection

The sample for this study consisted of elementary school children who had previously been referred, screened, and identified as gifted in an independent school district serving a suburban, predominantly blue-collar community of approximately 15,000 adjacent to a large metropolitan area in northeast Oklahoma. The children were referred for the Enrichment Study Program, a class designed to serve gifted and talented students, on the basis of having scored at or above the 97th percentile (composite score) on the Science Research Associates (SRA) achievement battery given annually throughout the school district. The children were then given the Short Form Test of Academic Aptitude (SFTAA) which is derived from the California Test of Mental Maturity. The SFTAA is a series of academic aptitude tests for use with grades 1 through 12. Each level contains two sections: Language and Nonlanguage. The Language section is comprised of a Vocabulary subtest and a Memory subtest. The Non-language section contains Analogies and Sequencing subtests.

Children scoring at or above the 97th percentile on the SFTAA were then identified as gifted and eligible to be served through the Enrichment Study Program. All students who were being served through the Enrichment Study Program during the current school year and who met the age requirements of the study (7-0 to 12-11) were identified as possible participants through examination of the class roster. Their parents were contacted through the mail with a packet of information explaining the nature of the study, a parent permission form to allow their children to participate, and a Child Behavior Checklist to complete and return. Sixty-three packets were mailed out with 51 being returned, a return rate of 81%. The following table summarizes the gender and age distribution of the sample used in this study:

TABLE II
GENDER AND AGE DISTRIBUTION
OF THE SAMPLE

AGE	MALE	FEMALE	TOTAL
7/0-7/11	3	1	4
8/0-8/11	5	1	6
9/0-9/11	6	4	10
10/0-10/11	4	4	8
11/0-11/11	9	9	18
12/0-12/11	1	4	5
	N=28	N=23	N=51

Instrumentation

Children's Embedded Figures Test

The Children's Embedded Figures Test (CEFT) is designed to assess field dependence/independence in children ages 5 through 12. Perceptual disembedding requires the ability to be able to separate things from experience, which is reflected in cognitive styles - "the characteristic, self-consistent modes of functioning which individuals show in their perceptual and intellectual activities." (Witkin, et al, 1971, p. 3). Field dependence/independence may also be expressed as psychological differentiation, or global or articulated processing. The authors stipulate, however, that "superior performance in cognitive tasks that require disembedding carries no implications about competence in other classes of cognitive tasks." (Witkin, et al, 1971, p. 13).

The CEFT, derived from the Embedded Figures Test (EFT), the most commonly used measure of field dependence/independence for adults, consists of two series of colorful, geometric-looking figures familiar to most young children, such as kite, house, robot, etc., in which a simple form is included as an integral part of the picture. After an initial training series, the child is asked to locate two simple shapes - a triangular tent and a trapezoidal house - in their respective series. The score is the total number of correct responses. Higher scores reflect a field

independent cognitive style while the opposite is true for field dependence.

Standardization

The authors selected a wide variety of complex figures which varied in degree of disembedding difficulty arriving at an initial pool of 72 items. These items were given to 100 boys and girls who ranged in age from 5 to 9 years old from a public school in New York, and those scores were analyzed to form two criterion groups, the highest 27% and the lowest 27% of each age group. From that, the final 25 items were selected based upon a chi square analysis to determine which items discriminated significantly between the high and low groups.

The CEFT was then standardized on a group of 160 children from 5 to 12 years of age randomly selected from two public schools in New York. The children were equally divided among four age groups, with an equal number of boys and girls at each age level. The effects of age and sex differences were calculated using an ANOVA which found significant effects for age ($F = 39.7$ $p < .01$) but neither significant sex nor sex-age interaction effects ($F = .81$ and $.49$, respectively). Apparently, performance on the CEFT becomes more field independent with age.

Reliability and Validity

The reliability estimates for the CEFT range from .83 to .90 and are similar to those obtained for the EFT. Reliability data for the 5-6 age group, based on test-retest analysis after a six-month lapse, was found to be .87 by Dreyer, Nebelkopf, and Dreyer (1969).

Numerous validity studies between the CEFT and EFT were not feasible because of the degree of difficulty of the EFT for younger children. However, when EFT scores for the nine-year-olds were corrected for attenuation, the correlation coefficients reach .80, comparable to those for older children. The authors concluded from this data that almost all the reliable variance on the CEFT is accounted for by common variance on the EFT (Witkin, et al, 1971). Correlations were found for the CEFT and the spatial-perceptual subtests of the WISC (Block Design, Object Assembly, and Picture Completion) ranging from .32 for boys ages 10 and 12 to .36 for girls of the same age groups.

Behavioral Rating Profile

The Behavioral Rating Profile (BRP) is subtitled as an "ecological approach to behavioral assessment" (Brown & Hammill, 1978, p. 1) for children ages 6-5 through 13-6. It purports to "provide an ecological evaluation of students' behavior that is well standardized, highly reliable, experimentally validated, and norm referenced." (Brown & Hammill, 1978, p. 7). The six segments of the BRP were

constructed as independent measures and can be used alone or in any combination. Since the Peer Scale was used independently of the other scales in the present study, a more detailed review and description of it is given; however, all generic data, such as standardization procedures, apply to the complete rating scale. The Self-Rating Scale is completed by the student and contains three self ratings (Home, School, and Peer) within the 60-item instrument. The subject responds "True" or "False" to statements about his/her behavior. An example from the Peer Scale is: "I don't tell any children how I feel." In addition to the Student Scale, the BRP provides a Teacher Rating Scale in which a child's teacher(s) rates his/her behaviors, such as concentration and motivation. Similarly, on the Parent Rating Scale, the child's parent(s) rates him/her on 30 items, such as lying and obeying curfew. An indice of the intensity of certain problematic behaviors is provided through scoring responses in these categories:

Like the student
Not much like the student
Not at all like the student

The BRP also contains a sociogram component in which a peer nomination technique is used to identify how often the child is selected in response to pairs of stimulus questions, one of which is positively worded ("Which classmate would you most like to ...") and one of which is negatively worded ("Which classmate would you least like

to...") in any or all of the three categories:

1. friendships
2. relationships based on academic abilities
3. relationships based on leadership skills

Item Development

Items were drawn from existing checklists and other related devices, especially from the Quay-Peterson Behavior Problem Checklist (1967), the Devereux scales (Spivak, Spotts, & Haimes, 1967), and the Walker Problem Behavior Identification Checklist (1970), as well as written descriptions of behavior from the parents and teachers of emotionally disturbed and learning disabled students. The final items were analyzed using the point biserial correlation method to estimate their discriminatory power so that each item contributed significantly and uniquely to the total score. Using Guilford's criterion of acceptable item validity of between .30 to .80, the median coefficients of the BRP were all found to be statistically significant and ranged from .43 to .83.

Standardization

The BRP was standardized on a sample of 1,326 students, none of whom were known to be receiving special education services, 645 teachers, and 847 parents. The students were selected at random from class rosters from public schools in 11 states.

Reliability and Validity

Internal consistency data indicate the degree to which the items assess the same construct. Those range from .74 to .97 for the BRP, using the Coefficient Alpha statistic derived by the Kuder-Richardson Formula number 20. Similarly, the standard error of measurement, whose size reflects the degree of fluctuation in scores due to error and should therefore be small in a reliable measure, from 1.6 to 4.0 for the entire BRP.

The data correlating the BRP with other rating scales are offered by the authors as concurrent validity information. Using samples comprised of institutionalized emotionally disturbed students, public school learning disabled and emotionally disturbed students, and students from a regular public school class, the authors compared ratings on the BRP with ratings on the Behavior Problem Checklist (Quay & Peterson, 1967), the Walker Problem Behavior Identification Checklist (1970), and the Vineland Social Maturity Scale (Doll, 1965). 89% of the coefficients were statistically significant at the .05 level, and 86% were of sufficient magnitude (at or above .35) to be considered clinically meaningful as well. The intercorrelation of subtests of the BRP ranges from .49 to .96 with a median of .81. The diagnostic validity of the BRP was demonstrated by examining the mean raw scores of the previously identified samples and testing them for significant differences using the t-test. This procedure yielded

information which led the authors to conclude that the normal children were perceived to exhibit appreciably fewer behavior problems than the handicapped children across all the ecologies studied (Brown & Hamill, 1978, p. 71).

Child Behavior Checklist

The Child Behavior Checklist (CBCL) is comprised of ratings for children ranging in age from 4 to 18 by parents, teachers, and the children themselves in the areas of social competence and behavior problems. The Social Competence Scale is composed of the Activities, Social, and School checklists which contain 20 items for which the parent rates the amount and quality of the child's participation in sports, hobbies, organizations, chores, friendships, interpersonal relationships, and school performance. The Behavior Problems Scale contains descriptions of problematic behaviors for which the parent rates the child as "NOT TRUE", "SOMEWHAT OR SOMETIMES TRUE", "VERY TRUE OR OFTEN TRUE". The sums of these ratings yield scores for the following descriptive scales:

1. Anxious-obsessive
2. Somatic complaints
3. Schizoid
4. Depressed-withdrawn
5. Immature-hyperactive
6. Delinquent
7. Aggressive
8. Cruel

A Youth Self Report, Teacher Report, and Direct Observation may also be added to the assessment to include different

perspectives of the child's activities and behaviors. In the present study, the Social Competence Scale was used independently of the other scales.

Item Development

The authors surveyed the existing literature regarding assessment of social competence before devising the initial versions of the Social Competence Scale. Items were then selected, using positive behavioral characteristics descriptions in a pilot test with parents of children referred for mental health services. The items were analyzed to determine those which discriminated between disturbed and normal children. Referred children scored lower than demographically-matched nonreferred children on each item. It was revised through pilot testing by obtaining ratings from parents of randomly-selected children who had not received mental health services for at least one year prior to the interview. The 1442 families who served in the norming process were selected from census information to represent a heterogeneous, stratified sample. Interviews were conducted until 50 CBCL's had been completed for each age and sex variable.

Reliability and Validity

Reliability data for the CBCL are given through inter-class correlational data which reflect the proportion of total variance in item scores that is associated with

differences among items, after error variance is subtracted. The stability of the ICC over three months was .84 for behavior problems and .97 for social competence. Test-retest correlation coefficients were .95 for behavior problems and .99 for social competence, both after one week intervals. Content validity data were given by the authors as the degree of relationship between the items and concerns of parents and mental health workers. All of the Social Competence items were significantly associated with clinical status. Criterion related validity data were given using clinical referral as the criterion. Referred children received lower Social Competence scores with the effects of age, sex, and SES removed, than did non-referred children.

Sociogram

The subjects were asked to respond to a peer nomination technique designed to elicit responses based on the sociability of their gifted classmates rather than academic prowess. The ESP classes meet on a regular basis for whole group activities, so that all the students were at least familiar with all other students in the program. Within the context of field trips already scheduled for the year and made known to the students, each subject was asked to list his/her first and second choices for seatmates on bus excursions to field trip sites in an individually-administered, written questionnaire. First choice responses were given two points, and second choice responses were

given one. All responses were tallied, and each subject was assigned a raw score based on the number of times he/she had been nominated as first or second choice by his/her classmates.

Data Collection

Participating students were administered the CEFT, BRP, and sociogram component of the assessment during a three-week period in November by a certified school psychologist. The students were tested in their ESP classroom on an individual basis. Each was asked to "help" the examiner find out about how students looked at things differently and were shown the demonstration cards for the CEFT. After the practice cards, each student took the CEFT, using a stylus to outline the embedded figure in each card. Then the examiner explained the nature of the BRP as looking at the way students viewed their friendships. The participant was told that there were no right or wrong answers for the BRP and that the examiner would assist with explaining unfamiliar words. After completing the BRP, the participant was asked to complete the sociogram component which read,

During this semester, when the ESP class goes on a field trip, you will be allowed to sit with the person you choose going to and from the event. Please write your first and second choices below.

A list of all ESP students' names (first and last) was displayed on the table to assist in spelling. At the end of the test sessions, which lasted approximately 15-20 minutes,

each participant was asked what his/her feelings were about the different kinds of work that were done.

Analyses of Data

Scores from the BRP, CBCL, and sociogram were subjected to a principal components factor analysis. In defining the dependent variable social sensitivity as scores of social competence, peer relationships, and sociometric status, it was necessary to determine the degree of intercorrelation among the three variables in order to better understand the overlap and contribution of each. Scores for the CEFT and gender, the two independent variables, and the factor scores from the factor analysis were then analyzed by stepwise multiple regression. Stepwise multiple regression was selected over standard regression because the focus of the study was upon prediction rather than explanation. Age was omitted from the initial equation because of the limited n at certain age levels of the sample, as mentioned previously. Tests for the assumptions of linearity, normality, and homoscedasticity were conducted through analyses of the standardized residuals. Subjects to independent variables ratio was determined to be 25:1, exceeding the recommended minimum of 5:1 (Tabachnick & Fidell, 1977).

CHAPTER IV

RESULTS

The purpose of this chapter is to present the results of the statistical analyses of the research question. Table III summarizes the descriptive statistics from the four test variables:

TABLE III
TEST MEANS AND STANDARD DEVIATIONS

	Test	Mean	Std. Dev.
Total N=51	Children's Embedded Figures Test	18.53	3.90
	Behavioral Rating Profile	16.53	3.28
	Child Behavior Checklist	21.57	3.48
	Sociogram	2.41	1.93
Boys N=28	Children's Embedded Figures Test	19.00	4.09
	Behavioral Rating Profile	16.79	2.88
	Child Behavior Checklist	21.80	3.19
	Sociogram	2.71	1.98
Girls N=23	Children's Embedded Figures Test	17.96	3.66
	Behavioral Rating Profile	16.22	3.75
	Child Behavior Checklist	21.29	3.87
	Sociogram	2.04	1.85

Factor Analysis Results

The purpose for doing a principal components factor analysis of the three measures of social skills was to better assess the construct of social sensitivity in measureable terms. The analysis yielded the following results:

TABLE IV
FACTOR ANALYSIS RESULTS

Variable	Eigenvalue	Pct. of Var.	Loadings
Behavioral Rating Profile	1.410	47.0	.802
Children's Embedded Figures Test	.945	31.5	.444
Sociogram	.646	21.5	.754

This analysis yielded only one factor. Using .75 as a minimum criterion for marker variables, both scores on the Behavioral Rating Profile and the Sociogram loaded sufficiently to warrant inclusion as significant contributors to this factor. However, scores on the Child Behavior Checklist could certainly be considered salient variables with a .44 loading and nearly a third of the shared variance. These loadings appear to indicate that peer relationships, from both the perspective of the student and from the perspective of his/her peers, constitutes the

majority of the factor, Social Sensitivity, although the parent rating of social competence of the student is a minor influence.

Multiple Regression Results

Based on previous research citing age, gender, and field dependence/independence as influences on social behavior (Buchanan, et al, 1976; Coates, et al; 1975; & Witkin, 1977), a linear composite of gender and scores on the Children's Embedded Figures Test was analyzed to determine the best predictor set for the social sensitivity scores obtained in the factor analysis discussed previously. Age was omitted because of the limited n at certain age levels of the sample. At the .05 significance level, scores for field dependence/independence entered the equation. The significance level for gender was .37 which caused it to be dropped from the equation as a non-significant predictor. A Pearson r coefficient between gender and field dependence/independence was found to be .13, suggesting that their shared variability is less than two percent. The following data were obtained for the multiple regression:

TABLE V
MULTIPLE REGRESSION ANALYSIS RESULTS

Multiple R	R Square	Adj. R Square	Std. Err
.30750	.09456	.07608	.96121

Further analysis of the data yielded the following ANOVA summary:

TABLE VI
ANALYSIS OF VARIANCE OF REGRESSION EQUATION

	DF	SS	MS	F	Significant F
Regression	1	4.72	4.72	5.12	.028
Residuals	49	45.27	.92		

These results indicated statistical significance for scores on the Children's Embedded Figures Test as predictors of social sensitivity scores at the .05 confidence level. However, since they accounted for only 9% of the variability, their value is questionable.

Tests for assumptions were completed by visual inspection of the standardized residuals scatterplots which indicated normal, linear, homoscedastic distributions.

Table VII presents the analysis of the residuals statistics:

TABLE VII
RESIDUAL ANALYSES STATISTICS

	Min	Max	Mean	Std. Dev.
PRED	-.6724	.5101	.0000	.3075
RESID	-3.2050	2.0914	.0000	.9515
ZPRED	-2.1867	1.6589	.0000	1.0000
ZRESID	-3.3343	2.1758	.0000	.9899

CHAPTER V

SUMMARY AND CONCLUSIONS

The focus of this chapter is on the conclusions drawn from the statistical results of this study and their implications in predicting social sensitivity skills among gifted elementary students.

Summary

The purpose of the present study was to examine the relationship between field dependence/independence orientations among gifted elementary students and their effective use of social sensitivity skills, specifically social competence, peer relationships, and sociometric status. Based on previous research from Witkin (1977) and others who found significant positive relationships between field dependence and social compliance, attention to social cues, self disclosure, interpersonal problem-solving skills, and social orientation, it was hypothesized that scores for field dependence/independence could be used to predict scores for social sensitivity. Using the Children's Embedded Figures Test (CEFT) to assess cognitive style orientations and the Child Behavior Checklist (CBCL), Behavior Rating Profile (BRP) and a sociogram to assess social sensitivity skills, a

stepwise multiple regression was utilized to assess the predictive power of the linear combination of CEFT and gender.

Conclusions

Within the limits and findings of the present study, the following conclusions may be drawn:

1. Scores for field dependence/independence are statistically significant predictors for scores of social sensitivity skills at that .05 probability level. Specifically, ratings of social competence, peer relationships and sociometric status may be predicted from field dependence/independence scores. However, their predictive power is limited, accounting for only 9% of the variability. This appears to support previous research findings in which statistical significance was reported for the relationship between field dependence and social compliance (Messick & Damarin, 1964), self disclosure (Sausa-Poza, et al, 1973), and sensitivity to the human environment (Konstadt & Forman, 1965). However, since strength of association data were not reported in these studies, it is difficult to assess the importance of those statistical relationships in predicting the behaviors. In the present study 91% of the variability remains unpredictable by field dependence/independence orientations.

2. Gender does not significantly predict social sensitivity skills at the .05 probability level. Coates, et

al, (1975) reported similar results among pre-schoolers. However, Buchanan (1976) did report significant gender differences among adolescents and attributed them to gender-role expectations.

3. Scores for peer relationships and sociometric status load sufficiently onto a single factor to be considered highly intercorrelated, accounting for 68.5% of the variance of the construct labelled social sensitivity. Parent ratings of social competence load sufficiently on the same factor to be considered a salient influence, accounting for 31.5% of the variance. Given the similarities in definitions of the various social constructs found in the literature, such as interpersonal sensitivity (Richie, et al, 1982), social cognition (Shantz, 1975), empathy (Feshbach, 1984), it is scarcely surprising to find that the three indices of social sensitivity used in the present study were found to be highly intercorrelated. Social competence, peer relationships, and sociometric status appear to be manifestations of a singular construct.

Implications

These conclusions present some useful information in planning for the social/emotional needs of gifted children. First, peer ratings and sociometric status appear to measure the same construct although from different perspectives. Their perceptions of their peer relationships, for the

children in the sample, closely matched their peers' perceptions of them as friendship choices. Second, the parents' ratings of their children's social competence accounted for nearly one third of the contribution to the factor of social sensitivity. Third, the predictive power of field dependence/independence orientations, though statistically significant, is not sufficiently meaningful in application to effectively utilize as a screening tool to identify gifted children who may be in need of additional help in effectively utilizing social sensitivity skills. The absence of statistical significance for gender in the regression equation supports previous research that gender differences are not apparent at latency ages but may emerge as a result of psychosexual development and gender-role expectations.

Given that the primary purpose of the present research study was to identify the efficacy of field dependence/independence orientations as predictors of social sensitivity skills of elementary gifted children, this information has several implications. Utilizing the BRP, a fairly quick and easy-to-administer questionnaire, instead of a more cumbersome sociogram in assessing gifted children's peer relationships will give approximately the same general information. If some gifted children are identified at risk for poor social effectiveness it is likely there are other factors to consider in addition to differences in cognitive style orientations, and these areas should be investigated.

Recommendations

The present findings and conclusions point to the need for additional study in the area of field dependence/independence and its relationship to social behavior among gifted elementary students. Although statistical significance was achieved for the predictive power of field dependent/independent orientations, its limited application value leads to speculation as to what other dimensions should be addressed when assessing the social sensitivity skills of such children. Certainly the influence of age needs to be ascertained by including sufficient numbers of subjects at each age level to adequately identify developmental trends, if any. Although the children in the sample appeared to be homogeneous with respect to intellectual functioning, it might also prove beneficial to delineate the gifted dimension into finer distinctions and assess the differences in social skills between children within different IQ score ranges.

Finally, an overall measure of personality might be utilized to identify underlying personality dimensions such as warmth, extroversion, nurturance, etc. which may also influence social sensitivity abilities.

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