1982

Role-taking and behavior

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AN ABSTRACT OF THE THESIS OF Jane Wynne Uphoff for the Master of Science in Psychology presented November 10, 1982.

Title: Role-taking and Behavior

APPROVED BY MEMBERS OF THE THESIS COMMITTEE

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The present study examined the relationship between the cognitive skill of role-or perspective-taking and naturally occurring behavior of behaviorally disordered children. Twenty-six boys, aged five years, nine months to twelve years, two months were tested and observed at their treatment facility. It was predicted that children who could take the perspective of others would prefer peer to adult interaction, would more likely give positive attention to their peers and would be more likely to use affective language than their non perspective-taking peers. These and related hypotheses were examined by observing each participant's interactive behavior for 36 minutes distributed over three different settings, lunch, freetime and organized activity on six or more

different days. To determine perspective-taking skill, two perspective-taking instruments were administered in a separate room at the treatment site. One measure (the Chandler role-taking task) required a child to tell a story from a series of three cartoon pictures and then retell the story from the point of view of a late arriving bystander. The other task (the Friendship interview from the Selman Measure of Interpersonal Understanding) assessed role-taking on the basis of the child's responses to questions about a filmstrip story that depicted a common dilemma between close friends. The variety and frequency of affective words was assessed by counting the affective words used by the child when responding to the first role-taking task, the cartoon stories. A vocabulary test was administered at the same time as the other cognitive measures. Before data analysis began, such methodological concerns as reliability of the observational code, reliability of the judges' scoring of the role-taking tasks and internal consistency of the measures were addressed. Cognitive measures, use of affective language and behavioral categories were then correlated with each other. The vocabulary test was used to partial general verbal skill from the relationship of role-taking and affective language. In addition to examining relationships among the measures, the children were divided into perspective-taking and non perspective-taking groups and compared on the various behavioral and language measures.

It was found that perspective-takers engaged in more neutral interaction with their peers than did non perspective-takers. While there was no negative relationship between perspective-taking and neutral interaction with adults, it was found that perspective-takers received less

positive and negative attention from adults. Although no relationship was found between perspective-taking and the general categories of distributing positive attention to peers and adults, there was a relationship between a specific sub-category of positive attention, sharing and the Selman perspective-taking measure. Helping behavior was marginally correlated with the Chandler perspective-taking task. No relationship was found between perspective-taking and receiving positive or negative attention from peers. Perspective-takers used a greater variety of affective words in response to the affectively-laden cartoon stories. No difference in use of affective language in the natural settings between perspective-takers and non perspective-takers was observed. No directional prediction regarding the relationship between perspective-taking and anti-social behavior, i.e., giving negative attention to peers and adults, was made nor a relationship found.

These results with a disturbed population, validate global assumptions regarding perspective-taking and children's choice of peer vs. adult targets for interaction. Further, the results provide support for the hypothesized relationship between perspective-taking and an affective vocabulary, and partial support for the proposed relationship between perspective-taking and prosocial behavior. The results challenge the appropriateness of perspective-taking training as an intervention strategy with behaviorally disordered children.

ROLE-TAKING AND BEHAVIOR

by

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A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE
in
PSYCHOLOGY

Portland State University

1982

TO THE OFFICE OF GRADUATE STUDIES AND RESEARCH:

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ACKNOWLEDGEMENTS

A project of this sort is not accomplished without the support and help of many people. I wish to express my thanks to them.

To my thesis advisor, Cathleen Smith whose own quality of thought challenges those of us who work with her to higher levels, who was graciously available for questions and counsel, and whose sense of humor endured, thank you.

To Barbara Stewart who assisted in conceptualizing problems in the study and in the data analysis and whose words of support came at critical moments, thank you.

To Roger Jennings who was a resource for the observational methodology and morale, thank you.

To Joan Williams, Lewis and Clark College and Sabrina Hanan, Reed College, who acted as examiners whose tenacity in gathering cognitive data was much appreciated, thank you.

To Mike Baker, Reed College, who acted as co-observer and was himself reliable in the seemingly endless pursuit of an acceptable level of interobserver reliability, thank you.

To the children and staff of Edgefield Lodge who participated in this project, thank you.

Finally, to my children, Ben and Bridget and my husband Gene who relinquished time, attention and meals from their mother and wife and were supportive and loving through its completion, thank you.

In addition to acknowledging the people I've mentioned above, I

would like to remember Sara Myers with the completion of this project. There will be those who read this who will not have known Sara. She was a colleague, also nearing the finish of her academic work at Portland State University when she became terminally ill. When I think of this project, I will always remember Sara's struggle and the loss of the grace of her company.

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CHAPTER I

INTRODUCTION

Six year old Dan Gilbreth, of the famous time and motion study family, lovingly chose and wrapped eleven large porcelain ash trays decorated with nude gilt and green cupids for each member of his family as Christmas presents. His ten brothers and sisters ranged in age from two to eighteen and none of them smoked. For that matter neither did their mother, Lillian. Dan, like other children about his age, was not yet able to see these objects as his siblings might. If in his view, they were enchanting, then of course, others would think so, too. With growth, children gradually develop the ability to imagine how others might think, feel or see a mutually observed event. They learn to appreciate that others bring a different set of experiences to the situation and have a different subjective environment in which to evaluate the event. With the development of these perspective-taking abilities, children can coordinate their behavior with others with increasing skill. An older child, for example, learns to present arguments in language that will heighten acceptance of his point of view. A twelve-year old, wanting permission to take a bicycle trip, will include the information that she will wear her helmet when presenting her request to her parents, knowing from her parents' point of view that her safety is an important concern. The development of perspective-taking is important for the growing child's communication skills, solution of social problems,

understanding of social situations and response to others' feelings. The following study is concerned with perspective-taking and the behavioral correlates of this cognitive skill.

The construct of role or perspective-taking, the ability to take the perspective of another person, has received considerable attention as a necessary skill for the development of mature social intelligence and behavior. (This construct in the literature has been termed role-taking and perspective taking. These terms will be used interchangeably.) Both Mead (1934) and Piaget (1959, 1965) are credited with early formulations of this construct and its importance to human development. For Mead (1934), taking the role of the other is critical for the development of the psychological self as a distinct entity apart from others. Interaction with others and the opportunity to consider one's own actions from the point of view of the other is the essence of social intelligence. Internal dialogue between self as actor and self as observer is the basis for the coordination of one's thoughts and (intuitively) behavior with others whether the "other" is just one in a dyad or the "generalized other" representing society's norms.

Piaget (1959) defined the inability to differentiate one's own perspective from that of other individuals as "egocentrism." Development of non-egocentric thought demands that one "cease to look upon one's own point of view as the only possible one, and to coordinate it with that of others" (Piaget, 1959, p. 277). In order for this cognitive growth to occur, a child must interact with his/her peers, be challenged by their differing perspectives and gradually differentiate and accommodate his/her own views. The child is continually constructing and reconstruct-

ing reality. The conflict inherent in the resulting social interaction is a necessary experience for the growth of mature social thought. Conflict creates a disequilibrium for the child which the child attempts to resolve through accommodation and assimilation.

Piaget's work, while acknowledged as the essential framework for role-taking research, was initially concentrated in the area of perceptual or spatial perspective-taking. His original wholistic view is lost in more recent attempts to expand the definition of the construct. In Piaget's view all experience is "filtered through and assimilated by available cognitive structures which both change and are changed by potential environmental inputs" (Chandler, 1977). Thus the distinction between subject and object, the knower and the known, is lost and replaced by the interaction. Although researchers have since labeled three dimensions of role-taking: perceptual (i.e., what does the other see?), cognitive (i.e., what does the other know?), and affective (i.e., what does the other feel?) (Kurdek and Rogdon, 1975; Shantz, 1975), Piaget's theoretical framework does not permit such a differentiation of the process of cognition. In his view, all cognitions are social, and the same formal mechanisms for organizing those cognitions are at work. It is the requirement of the experimental method, which fractures cognition into subject-object components in order to study dimensions of the construct, that has violated Piaget's original notion of the child as a unified structural whole (Chandler, 1977). Nowhere is the subject-object problem so apparent as in the affective area, i.e., what does the other feel? Indeed, an enduring problem with measures of "empathy" has been how to distinguish between what the "subject" he/she might feel in that same situation (subject) and identification of the other's emotion (object)

(Borke, 1971; Rosemberg, 1970.) For an expanded discussion of Piaget's theoretical framework in relation to role-taking, see Chandler (1977).

Separating role-taking into three subconstructs or dimensions has proved useful as a research tool (Borke, 1971; Flavell et al., 1968; Feshbach & Roe, 1968). However, other researchers in the cognitive-developmental tradition (Chandler, 1977; Piaget, 1970; Enright and Lapsley, 1980) have considered cognitive and affective perspective-taking as one general construct of social role-taking involving the same cognitive processes but different content. One would assume that there would be a high correlation between measures of affective role-taking and cognitive role-taking, but this is not the case (Rubin, 1978; Ford, 1979; Enright and Lapsley, 1980). Given the serious methodological problems with both kinds of measures (Enright and Lapsley, 1980) particularly with measures of affective perspective-taking (Smith, Leinbach, Stewart & Blackwell, in press), these low correlations are often attributed to measurement error and not lack of convergence of constructs. Indeed, when affective and cognitive aspects of the same role-taking instrument are measured, the results are similar (Bridgeman, 1981).

Relationship Between Role-taking and Behavior

Research in the area of role-taking, stimulated by the development of a social role-taking measure by Feffer and Gourevitch (1960), has been largely descriptive in nature, the major thrust of which has been the establishment of the age-stage growth of role-taking in the child. A few reports, however, have attempted to empirically relate the role-taking construct to behavior, particularly prosocial behavior. For example, Rubin and Schneider (1973) found generosity (as measured by dona-

tion to a needy child in a contrived laboratory setting) and helpfulness (as measured by help given to a younger child in a laboratory setting) correlated with a role-taking task requiring the child to describe novel graphic designs hidden from the examiner in order to match them to the set held by the examiner. Bridgeman (1981) demonstrated a relationship between role-taking on a task developed by Chandler and cooperation: children's role-taking scores improved significantly as a result of co-operating with other children in an interdependent learning task. Iannoti (1978) found that children trained in taking the roles of story characters shared more candies with a needy child than a control group of children. No effect on laboratory measures of aggression or empathy were found. A program designed to teach fourth and fifth graders the recognition of affect using video-tapes, role-playing and discussion produced significant decreases in aggression and increases in prosocial behavior (Elardo and Caldwell, 1976, as cited in Urbain and Kendall, 1980). On the other hand, Zahn-Waxler, Radke-Yarrow and Brady-Smith (1977) failed to find a relationship between a variety of single role-taking tasks such as choosing the appropriate chair size from a group of adult and child chairs for the adult experimenter and helping, sharing and comforting in semi-naturalistic laboratory situations. It is certainly logical to assume that before one can engage in an act of helping, comforting or cooperating, one would have to appreciate the other's need. Although the empirical literature to date does not unequivocally support the notion that because a child is a perspective-taker, he or she will act prosocially, i.e., will share, help or comfort, the theoretical assumption that perspective-taking is probably an antecedent to such behaviors has

not been dismissed (Mussen and Eisenberg-berg, 1977; Shantz, 1975).

Ratings of Behavior and Role-taking

In addition to the specific prosocial behavior categories mentioned above, general social adjustment has been rated by parents, teachers or clinical staff and correlated with perspective-taking, with inconsistent results. Using the Classroom Adjustment Rating Scale (CARS) (Clarfield, 1974), Burka and Glenwick (1978) found a significant positive correlation between high perspective-taking (with the measure developed by Chandler, 1973) and overall classroom adjustment, and negative correlations with learning difficulties in boys and shy, anxious behavior in girls. Within the global assessment of social adjustment, children's personal strengths have also been assessed and correlated with perspective-taking. Selman (1980) found that children who received high scores on the Health Resources Inventory, which rates school-related competencies such as being a good student, being "gutsy," peer sociability, being polite and courteous and tolerating frustration, demonstrated significantly better perspective-taking ability. Kurdek (1980) used a parent rating instrument of childrens' personality (all but 12 items on the 600 item Personality Inventory for Children) along with the administration of the Chandler measure, and found that parent ratings of social skills, adjustment and achievement correlated with the child's performance on the perspective-taking task. The Devereaux Elementary School Behavior Rating Scale was used to assess school-related problem behaviors in a study conducted by Elardo and Caldwell (Cited in Urbain and Kendall, 1980). Significantly higher scores for classroom adjustment were obtained by the experimental children trained in role-taking and problem-solving than by a no-treat-

ment control group.

In contrast, Kurdek (1978) correlated a composite measure of classroom adjustment (using five prosocial items and seven antisocial items) with performance on two perspective-taking tasks and found that the children rated as antisocial were the best perspective-takers. These were children who were discipline problems, highly disruptive, prone to fighting and quarreling, depressed and shy. In a study by Waterman, Sobesky, Silvern, Aoki and McCaulay (1981), disturbed, learning disabled, and normal children were rated on two dimensions by teachers: withdrawn-gregarious and antisocial-prosocial. These ratings of the children were then correlated with their performance on two perspective-taking tasks, the nickel-dime task (Flavell, 1968) and an affective perspective-taking task developed by the authors. Like the Kurdek (1978) study, antisocial behavior was positively correlated with relatively superior perspective-taking in the emotionally disturbed group of children. However, in the Waterman et al (1981) study, there was a negative correlation between withdrawn behavior and perspective-taking.

Finally, Selman (1980), found no correlation between problem area behaviors as assessed by the CARS (i.e., learning difficulties, problems of withdrawal, dependency or undersocialization, and disruptive or overly aggressive behavior) and social perspective-taking as measured by the perspective-taking task he developed, the "sociomoral dilemma."

Support for the notion that perspective-taking is related to social competence comes, in part, from studies which have been conducted with delinquent and disturbed children. Chandler (1973) and Chandler, Greenspan and Barenboim (1974) found role-taking (as measured by the instrument

he developed) to be significantly low or absent in these populations compared to their comparably aged non-delinquent and normal peers. In a study with delinquent boys (Chandler, 1973), the experimental group made films about children their own age in which each participant acted each of the roles in the skits they wrote and filmed. They then viewed their productions thus giving them the opportunity to see themselves in other roles. Behavioral improvement in the three delinquent groups (a no-treatment control was included in the study) was assessed by noting recidivism, i.e., number of contacts with the court in an 18 month follow-up period, and comparing this number with court contacts in the 18 month period before the intervention. When the experimental group was compared to the attention control and no-treatment groups separately, there were no significant differences. Compared to the attention control and no-treatment groups combined, however, the experimental group trained in role-taking, committed significantly fewer delinquencies in the post-intervention period.

Remediating this cognitive deficit in emotionally disturbed children with the film-making project described above (Chandler et al., 1974), produced a significant improvement in role-taking skill when compared to a no-treatment control. (The other experimental group participated in communication exercises which relied heavily on referential communication skills.) In this disturbed group of children, global ratings of behavioral improvement based on reports of concrete changes in social and interpersonal behavior were made by clinical staff 12 months after the completion of the posttest phase. The subjects in the two treatment groups showed slightly more behavioral improvement than did the children in the no-treatment control.

Little and Kendall (1979) partially replicated Chandler's (1973) study with institutionalized adolescent girls as subjects and found no differences in increased role-taking ability between a group that was required to rotate and perform each role in the film making project and an attention control group merely required to cooperate in the making of a film. Nor did she find any differences between the two groups in social adjustment and self-control as measured by performance in the institution's token economy. Brideman (1981), using Chandler's (1973) role-taking measure as one of the dependent variables, implemented a social studies curriculum that required cooperation in an experimental group of fifth graders, and found a significant increase in role-taking ability at the post-intervention time of measurement. This report supports Little and Kendall's (1979) speculation that the cooperation required of the attention control group in her study may have produced the increase in role-taking.

As can be seen, most attempts to relate role-taking to behavior have used behavior rating scales and not systematic, naturalistic observation of behavior. There are problems with drawing conclusions from such a data base. Rating scales depend on memory of the observer and variable lengths of time the rater may have known the subject. Occasionally, rating scales are pieced from different sources (Kurdek, 1978) which attenuates any reliability and validity strength of the original measure. Further, it is difficult to assess the accuracy of behavioral ratings when they probably reflect observers' global assessment of behavior. Assessment of naturally occurring individual behavioral events is likely to be quite different from global ratings of behavior (Kent et al., 1974).

Role-taking and Direct Observation of Behavior

Examples of direct behavioral assessment of a social-cognitive construct such as role-taking in the natural setting are relatively few. O'Connor, (1977) hypothesized that perspectival children would have a preference for peer interaction over interaction with adults. Using a time sampling method and coding for social exchange, proximity and interest, O'Connor found no differences between placebo and experimental groups of pre-schoolers in their preferences for adults vs. peers as a result of role-taking training. Garrity and Donoghue (1977) made the assumption that visual imagery represents internalized imitations of actions which occur in actual situations and would increase when roles were enacted. The emotionally disturbed children who served as subjects in this study acted as their own controls. Half of the subjects discussed one story and role-played another while the remaining subjects role-played the first and discussed the second story. At the conclusion of the intervention, investigators recorded eye movements of the children as they listened to the reading of the two stories. The researchers explained the lack of significant differences between the two conditions as the result of contamination of the treatment by control condition in their counter-balanced within subjects design. Enright and Sutterfield (1980), while not examining the specific social cognitive construct of role-taking, did demonstrate a relationship between another such construct, moral judgment, and behavior. (Moral judgment and perspective-taking share common origins within the Piagetian framework. Taking another's perspective appears to be necessary for the subject to engage in principaled moral reasoning [Yussen, 1976; Costanzo, Coie, Grumet and Farnill,

1973; Eisenberg-berg and Mussen, 1978].) Their study was embedded in an ethological theoretical framework developed by Charlesworth (1976), which proposes that we see intelligence operationalized as competent, social behavior. Interactive behavior among first graders was coded using a sequence sampling method. Categories of behavior included successful and unsuccessful interactions (defined as obtaining or not obtaining a real or implied goal), approach by others, and derogation. Moral judgment was found to have a significant negative correlation with unsuccessful outcomes, and a significant positive correlation with successful outcomes and with approach by others. It should be noted that social competency in this study incorporates neutral and antisocial behavior in the successful category of behavior, e.g., getting or taking an object, threatening in response to another's actions.

Strayer (1980) correlated naturally occurring empathic behaviors in pre-schoolers with performance on an affective role-taking task developed by Urberg and Docherty, 1976. Scan sampling of the group combined with an event-recording procedure was used to count displays of emotion and the occurrence of any empathic responses to the emotion displayed, e.g., participation in the affect of the other, or offering comforting, help-giving, or reinforcing comments. It was found that 39% of the displays of emotion received an empathic response. There was a nonsignificant correlation between the affective and perceptual role-taking tasks and empathic responses naturalistically observed.

One other study which observed interpersonal understanding in naturally occurring circumstances was conducted by Jaquette (1980). Eight emotionally disturbed youngsters (ages 11 and 12) met as a group

over eight months, one hour a week. During these sessions, interpersonal problems, democratic group decision-making and real-life concerns were the topics of discussion and areas of intervention. Content analysis of these transcribed sessions, based on the standard interview scoring procedures developed by Selman (1979), were used to score the students' stage of perspective-taking. Time-series analyses revealed a progressive pattern of increase in perspectivistic responses during the first two-thirds of the school year and a decrease during the last third of the school year. The usefulness of this study is limited by the lack of any systematic collection of behavioral data other than verbal behavior. For example, increases in successful interactions with other students, and decreases in "time-outs", loss of privileges, and number of aggressive acts might have been regarded as evidence for improved social competence and might have been correlated with the demonstrated increase in perspective-taking ability.

The need for verifying hypothetical constructs of human behavior in their natural settings has been emphasized by a number of researchers (Bronfenbrenner, 1977; McCall, 1977). Otherwise, we run the risk of becoming "the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time." (Bronfenbrenner, 1977, p. 513). Thus there is the current emphasis in developmental psychology on the refinement of our constructs by establishing their ecological validity. Enright and Sutterfield's (1980) study, which established and then observed behaviors thought to be evidence for the social cognitive construct of moral judgment, is an example of this kind of work.

The Present Study

The validation of role-taking in naturally occurring settings presents a theoretical challenge, given the variety of behaviors (both prosocial and antisocial) which have been shown to be related to this cognitive skill. The literature suggests that in a disturbed population the full range of prosocial and antisocial behaviors will be available, and it ought to be possible to observe behavioral differences in children who are perspective-takers and those who are not. In addition, since training in role-taking has been used as a social-cognitive intervention with emotionally disturbed children (Chandler, 1973; Little and Kendall, 1979), it seems appropriate to study behavioral correlates with role-taking in the disturbed population. With this goal in mind, it was decided to administer two measures of role-taking to children at a local school for disturbed children and to observe them there in naturally occurring, loosely structured activities. The Chandler (1973) cartoon task was chosen for its excellent reliability and stability (Enright and Lapsley, 1980) as one measure of role-taking. Because this measure does not test perpective-taking levels beyond the recognition of two perspectives (self and other), one of the Selman "sociomoral dilemma" tasks was added. This task tests the next higher perspective-taking levels: self-reflective role-taking (the child can view him/herself from the other's viewpoint) and the generalized other perspective (the child can simultanesously consider the viewpoints of self and other.

The categories of behavior to be observed were drawn from those used by Gottman, Gonso and Rasmussen (1975). These categories attempt to capture the frequency and quality of children's interaction with others,

both peers and adults, in the school setting.

Statement of Hypotheses

Based on the literature on role-taking, several hypotheses were formulated.

· Congruent with the theoretical view that children need to interact with others in order for their perspective-taking skills to develop, (Mead, 1934; Piaget, 1959), it was predicted that perspective-takers would be less likely to spend time alone on or off task.

· Considering the evidence suggesting that positive interaction with peers e.g., cooperation, but particularly prosocial behaviors such as sharing, helping, and comforting are related to role-taking (Bridgeman, 1981; Iannoti, 1978; Elardo and Caldwell, 1976), it was predicted that perspective-takers would both distribute to and receive from their peers more positive attention.

· Considering the emphasis placed on peer rather than adult interaction as the arena for perspective-taking development (Piaget, 1959), it was predicted that perspective-takers would seek and receive less attention from adults than their non perspective-taking peers.

· Considering the evidence suggesting a relationship between perspective-taking and the use of a more complex and accurate affective vocabulary (Waterman, et al., 1981), it was predicted that perspective-takers would use significantly more affective language than their non perspective-taking peers both in responding to an affectively-laden task and in their natural settings. It was expected that this relationship between perspective-taking and affective language would remain when performance on a measure of general vocabulary skill was statistically

controlled.

· Considering the lack of clarity regarding the relationship between perspective-taking and antisocial behavior (Kurdek, 1980; Elardo and Caldwell, 1976; Selman, 1980), no directional prediction was made as to the relationship between perspective-taking and giving negative attention to others.

CHAPTER 2

METHOD

SETTING

This study was conducted at Edgefield Lodge in Troutdale, Oregon. Edgefield is a non-profit school and agency designed for care of behaviorally disordered children. Children were observed in three physical spaces at the school. Both day treatment and residential treatment programs are housed in the same building where they share school rooms and other spaces. Lunch for day treatment children took place in a dining room where it was served family style, the children sitting at long tables with other children and child-care workers in their unit. Lunch for children in the residential units was delivered to their day rooms where they, too, ate family style. Freetime typically took place in unit day rooms and adjacent halls. Occasionally, children were observed in a separate game room where there was a pool table or outside where climbing structures, slide and swinging tire were available. Organized activity also tended to be in the day room area. If the weather was inclement such that an organized game couldn't take place outside, the PE shed was used.

Cognitive data were gathered across campus in a house used as an office building by the agency. The basement office where cognitive data were collected, contained a table and chairs for examiner and subject as well as some other office furniture stored there by the agency. The

filmstrip was projected onto a piece of large white paper attached to the wall of the office.

SUBJECTS

Twenty-six boys from Edgefield Lodge participated in this study, ten from the residential program and sixteen from the day treatment program. The boys ranged in age from five years, nine months (69 months) to twelve years, two months (146 months) with a mean and median age of nine years, five months (113 months). The children fell into the normal range of intelligence. All subjects were white, most coming from a lower class population. Many of these boys came from single parent families, and most had been identified as having conduct problems that precluded their participation in special education programs in adjacent public school districts. The goal of the agency is to change their behavior such that they may be returned to programs within their own school district. To remain in treatment, the child's family is also required to participate in regular therapy sessions at the agency. The range of treatment time is six to eighteen months, with an average stay of one year. Children with organic and severely psychotic difficulties are not accepted by the agency.

Children who were willing to participate and whose parent or guardian had given written consent, served as subjects. The total population at the agency at any given time ranged between thirty-five and forty-five children. Of the forty-nine children whose participation was requested during the course of the study, July to December 1981, four families refused their permission, twenty-six became subjects in the

study, and the remaining nineteen were pilot subjects for the cognitive instruments, female, or unable to participate because of transition in or out of the agency.

PROCEDURE

Subjects were individually tested by one of two examiners trained by the experimenter. Cognitive assessment included a role-taking instrument constructed by Chandler (1973), a measure of interpersonal understanding based on the coordination of social perspectives constructed at the Harvard-Judge Baker Social Reasoning Project (Selman, 1979) and a vocabulary test, the Peabody Picture Vocabulary Test. The two perspective-taking instruments were administered together in a 40-45 minute session; the PPVT was administered in a ten minute session on another day. One examiner tested fourteen children and the other tested twelve. The test groups did not differ by age. Children were escorted to and from the testing room by the examiner. At the end or when appropriate, tangible reinforcers (stickers, peanuts and raisins) were used as reinforcement. Children who refused to participate were returned to the classroom. In two of three such instances, a more suitable time was found to test the child. One child refused to cooperate with subsequent efforts to test him. Thus responses on one cognitive instrument (the Selman) were missing for one child.

Behavioral data were collected over a period of five weeks, three weeks of which joint observations were collected by the experimenter and a co-observer trained in the observational code. These observations were made during lunch, freetime and organized activity, the second half of

the childrens' day when time is less structured and more opportunities for them to interact with each other are present.

COGNITIVE TESTING

Perspective-taking (Chandler). One measure of perspective-taking and two measures of affective language were obtained from a task devised by Chandler (1973). This task has three items and takes approximately 20 minutes to administer. Each item is a six to eight frame cartoon sequence which tells an affectively-laden story. In one story, illustrated in Figure 1, a little boy is tossing his coin in the air when it accidently falls into a storm drain. He feels sad about his loss and sits down on the curb looking sad. A friend comes along tossing a baseball into the air and appears to invite him to play. The subject child is asked to tell the story and then retell it from the point of view of the bystander (here, the friend) with the first frames showing the loss of the coin removed. For the measure of perspective-taking, responses were scored on a five-point scale (0-4), with scale point 0 representing complete egocentrism (i.e., the subject does not recognize that the bystander has access to different amounts of information and attributes to the only partially informed bystander knowledge of details which could only be known by himself) and scale point 4 representing complete non-egocentrism (i.e., the subject is aware that the bystander is exposed to less information than he is and would be led to a sharply different conclusion regarding the chain of events depicted).[1] (Descriptions of each scale point on the five-point scale may be found in Appendix A; the remaining two cartoon tasks may be found in Appendix A as well.)

It was found in piloting this instrument with the male, disturbed

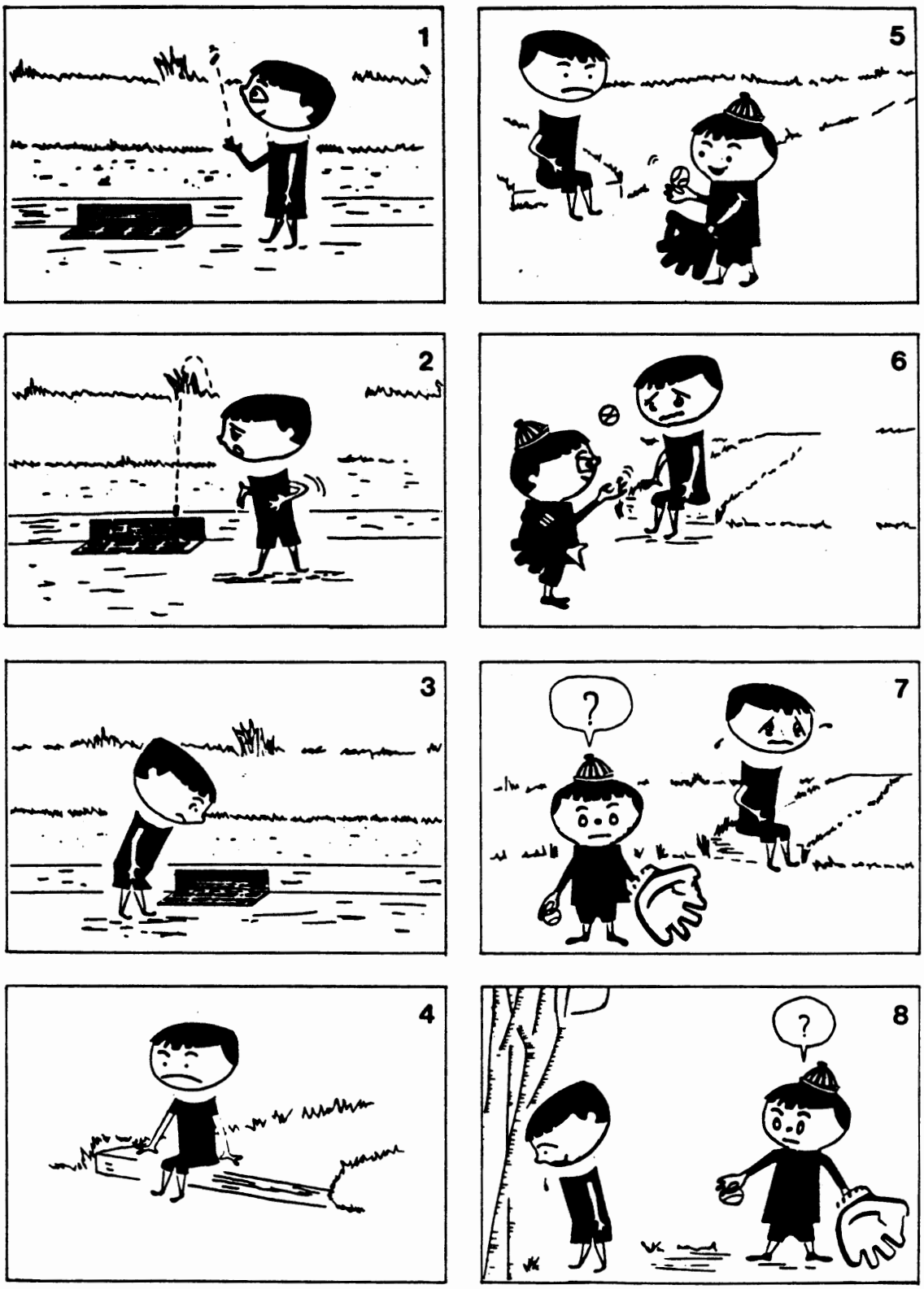

Figure 1. Coin Story. Adapted from Chandler (1973).

population of the study that the sex of the protagonist in the cartoon task produced needless difficulty. For example, in the story about the lost coin, the original protagonist was female. Several subjects observed that the little girl was sad because "obviously girls don't play baseball." To facilitate the administration of this task, gender identifying characteristics were removed such that the resulting three cartoon stories contained only male figures.

The administration of this task was taped and transcribed.

Perspective-taking (Selman). A second measure of perspective-taking was obtained from Selman's (1979) "sociomoral dilemma" which is modeled on the clinical interview first developed by Piaget and refined by Kohlberg. A short dilemma, in this case one involving friendship, is presented to the child in the form of a filmstrip. In the dilemma used in this study two children, Kathy and Becky are best friends. A new child, Jeanette, moves into the neighborhood and seems to "hit it off" with Kathy. The new child invites Kathy to an ice show, which takes place at a time when Kathy and Becky have something else planned. Appendix A contains the story the subject children heard. The subsequent semi-structured interview uses this story as a starting point to probe the child's understanding of friendship in six areas: formation, closeness and intimacy, trust, jealousy, conflict resolution, and termination. Using structured probes embedded in the interview and others as they appear necessary, the interviewer seeks to establish the child's highest level of interpersonal understanding.[2] The child's responses to the six issues are averaged, resulting in a score from 0 to 4, 4 reflecting mature interpersonal understanding. (Choice of the friendship domain

was made on the recommendation of Robert L. Selman to this researcher (Selman, 1981).) Responses to the Selman measure were taped and transcribed.

Vocabulary (Peabody Picture Vocabulary Test.) This is a test of receptive language often administered in studies of this kind as a verbal IQ test. Here, it was used as a measure of general vocabulary.

Affective language. Record was also made of the variety and repetition of affective words (e.g., sad, unhappy, frustrated, disappointed, upset) in the child's responses to the Chandler stories. The examiners were instructed to use the single, simplest affective label for each story, e.g., sad, scared or angry, when administering the test so that the child's own available vocabulary would be stimulated by the three emotions depicted in the three stories. Two measures of affective language were obtained during the cognitive testing: variety, the number of different affective words employed in responses, and frequency, the frequency of affective words.

NATURALISTIC OBSERVATION

Each child was observed for a total of thirty-six minutes divided into twelve three-minute observations. Each three minute observation was coded in eighteen, 10-second intervals. These twelve observations were distributed over a range of six to eleven days per child. Since the children in this agency function in small groups, a criterion of availability for observation was adopted such that he was in the presence of at least one other child with whom he could interact and was not taking a "time-out." When several children were present, coding began with a different child whenever possible so that a child would not be

coded at the same phase of the setting for each of the four possible observations per setting. Toward the end of the data collection, data gathering was more sporadic as specific observations were needed on specific children in one of the three settings. In one unusual case, the child was unavailable on three separate days because he was either completing homework or was taking a "time-out."

The experimenter was equipped with a small cassette tape-recorder with an earphone. A continuous tape of timed instructions was played for each observation session cuing the observer at the beginning and end of each 10-second interval and giving the number of the interval to be coded. There was a lapse of three seconds between each interval for decision and recording time. The observations of the second observer were synchronized with those of the experimenter through the use of a second earphone connected to the tape recorder by a double jack. It was explained to the children at the agency that when they saw earphones in the observers' ears they were not to talk to them. The use of this discriminitive stimulus proved effective. A list of the instructions to observers may be found in Appendix C.

Behaviors coded. The following behavioral categories were used: 1) child not interacting +, the child is not interacting but is following expectations of the setting or is on task; 2) child not interacting -, child is not interacting and is not following the expectations of the setting, is off task. (To eliminate the awkwardness of these terms "alone on-task and alone off-task will be used respectively, to refer to the preceding two categories in the subsequent discussion. It is to be understood, however, that the child was not alone in that another child or children needed to be present in order for his behavior to be coded.);

3) gives + to peer, verbal and nonverbal, child gives approval, smiles, touches another child, complies with a request, or behaves prosocially with a peer, includes helping, sharing comforting and cooperating behaviors; 4) gives - to peer, verbal and nonverbal, child verbally or physically threatens, swears at, derogates, kicks or hits; 5) receives + from peer, verbal and nonverbal, child receives behaviors described in 3 from a peer; 6) receives - from peer, verbal and nonverbal, child is the recipient of behaviors described in 4 from a peer; 7) entry or neutral behavior, verbal and nonverbal, child verbally initiates an interaction, includes conversations which are not apparently valent, (positive or negative) for the focal child; 8) gives + to staff, verbal and nonverbal, see 3; 9) gives - to staff, verbal and nonverbal, see 4; 10) receives + from staff, verbal and nonverbal, see 5; 11) receives - from staff, verbal and nonverbal, see 6; 12) entry or neutral behavior, child to adult and vice versa, child verbally initiates an interaction with an adult, includes conversations which are apparently neutral for the child. Complete operational descriptions of the behavior categories along with examples from the data may be found in Appendix C. [A copy of the actual coding sheet may be found in Appendix D.]

Observed affective language. In addition to the coding of the behaviors listed above, examples of spontaneously occurring affective language were noted in the space to the right of the interval coded. These included words such as love, like.

A list of variables with derivations and possible range of scores of the measures described above may be found in Table I.

TABLE I

LIST OF VARIABLES WITH DERIVATIONS AND POSSIBLE RANGE OF SCORES

Variable	Derivation of Score	Range
	Cognitive Testing	
Perspective-taking	Chandler: mean of judges ratings of three cartoon tasks	0.00 - 4.00
Perspective-taking	Selman: mean of judges ratings of childrens' responses on six issues in a probed interview	0.00 - 4.00
Vocabulary	PPVT: standard score	81 - 126
N-Affective language	Variety of affective words used by the child during the Chandler task	3 - 13
F-Affective language	Frequency of affective words used during the Chandler task	9 - 27
	Naturalistic Observation	
Behavior Categories 1 - 12	Frequency of the behaviors not to occur more than once per 10-second interval	0 - 216
Affective language	Frequency of spontaneously occurring affective words during 36 min. of observation	0 - 8
	Personal Characteristics of Subjects	
Age	Subject's age in months	69 - 146
Treatment Program	Residential = 1; Day treatment = 2	1 or 2

RELIABILITY

Chandler measure. Each subject's responses to the three cartoon tasks were separated and grouped by task. Two judges scored all three

sets of data. The correlation coefficient between the two judges' ratings of the three separate stories were: Sandcastle, .87; Broken Window, .79; and Coin, .86. In the four cases where responses were not scorable, the average of the subject's responses on the other two tasks was inserted as the score for the missing datum. Using each judge's ratings separately, two overall Chandler scores were computed for each child by averaging scores on the three cartoon tasks. The reliability of the average of the two judges' ratings of the Chandler tasks was .97.

Selman measure. In order to assess the reliability of this measure of interpersonal understanding, two judges studied the manual provided by Selman (1979) and scored data from three pilot subjects available from the population of the study. Disagreements were discussed until a mutually agreed-upon score evolved. Interviews of the remaining four pilot participants were then scored independently and disagreements resolved for mutually acceptable scores. Since the supply of pilot subjects was now exhausted, it was decided to draw several subjects' protocols from the data and score those continuing until an acceptable level of interrater reliability was achieved. This approach was suggested by Enright, 1982. The correlation between the judges rating of the first seven interviews drawn from the data pool and scored in this manner was .89. It was decided to proceed with scoring the remaining eighteen protocols.

The correlation coefficient for the two judges' ratings of all twenty-five protocols was .78. The reliability for the average of the two judges when using the formula suggested by Winer (1971) was .88. The first eight interviews were then discussed and a consensus score assigned to each. The correlation between this score and an average of

the two judges' scores for the eight protocols was .91. Thus, it was decided to use the average of the two judges' scores for each subject in the subsequent analyses. The average of the two judges' scores was chosen over the consensus score because the former was thought to be less prone to bias from one or the other judge since it represented the average of two independent scorings.

Naturalistic observation. To establish a reliable observation code, two observers gathered eighty-three, three-minute observations over a period of one month prior to actual data collection. These practice observations were made across all three settings and across twenty-six different children in both residential and day treatment programs. Because schedules in day treatment allowed more accessibility to the specific environments in which the children were to be observed for this study, more preliminary observations were done in the day treatment program. This was appropriate in terms of the relative number of subjects from the two programs, there being more subjects in the day treatment area.

A criterion of twelve consecutive observations at or above 85% agreement had initially been established for the beginning of data collection. The availability of the second observer and the time frame of the study precluded achieving this criterion. Instead, data collection began when twelve consecutive observations averaged 85% as determined by the number of agreements/number of intervals coded in that observation. The observers developed and refined a coding scheme in which more than one category could be checked during one interval, e.g., a child could be scored as cooperating in a game and carrying on a "neutral" conversation with a peer at the same time, or a child could be scored as giving

both verbal and nonverbal attention to a peer at the same time. With this in mind, percentage agreement for these last twelve observations was computed in two ways. First, when one observer recorded only one of the two categories the other observer had used, the interval was considered a disagreement. Using this conservative approach, percentage agreement for the last twelve observations ranged from .72 to .94 with a mean of .85. Second, when the observers agreed on one of two decisions for the interval and that agreement was considered as .5, percentage agreement ranged from .75 to .94, with a mean of .87.

Following the refinement of the code and establishment of observer reliability, data were gathered over a period of five weeks. Of the 309 total observations in this study, 117 joint observations were collected during the first three weeks of this period. A joint observation was collected for each child in each of the three settings (lunch, freetime and organized activity) with one exception: a child whose care was terminating at the agency and whose transition schedule prevented the collection of his joint-lunch observation. Whenever possible, a second joint observation per setting per child was made. Thus, for twenty of the twenty-six subjects, the number of joint observations exceeded the requisite three.

Slightly less than half (N=54) of these joint observations were used to compute interobserver reliability for the study. It was decided to sample the joint observations across all children twice over the span of joint observational time.[3] First, observations were ordered consecutively within each of the three settings, i.e., lunch, freetime and organized activity. Each setting was then divided into six subsets. To form the first of the six samples of nine joint observations each,

three observations were drawn from the first subset of each setting. This procedure was repeated to form the remaining five reliability samples. In order for each child to appear once within the first three samples, and once in the second three, sampling began with the appropriate subset (e.g., the second subset if it was the second sample) and proceeded until the nine observations for that group contained nine children who were not included in the previous sample. In this way, the 54 joint observations included two observations for twenty-four children and three observations for two subjects. On each sample, a Cohen's Kappa was computed (Sackett, 1978), the agreement statistic used for the observational data in this study. Cohen's Kappa is now considered the statistic of choice where percentage agreement has been employed in the past. It is defined as the percentage agreement while controlling for chance. Not surprisingly, it is typically lower than the percentage agreement statistic.

Since only one decision for each observer in each 10 second interval could be used in the matrix for the Kappa, the priority system of the coding instructions was used to decide which category to enter if more than one had been used by an observer.[4] In addition to the priority decision making found in the coding instructions valent nonverbal behavior (behavior which appeared to be positive or negative to the observer) was entered instead of entry/neutral (E/N) if they appeared together; the behavior of the focal child was entered if two valent behaviors were recorded without indicating which came first; the E/N behavior of the focal child was entered if both E/N for child and adult appeared. It was also decided at this point to collapse the verbal and nonverbal categories for both reliability calculations and the subsequent data

analysis. Kappas for the six samples of joint observations were as follows: .72, .71, .78, .77, .67 and .74. When all 54 observations were collapsed into the separate settings, the following kappas resulted: lunch, .72 agreement; freetime, .71 agreement and organized activity, .76 agreement.

Whether two observers are as reliable at the conclusion of data collection as they were at the beginning of data collection in a naturalistic observational study is a concern when using this methodology. While observer drift was not the primary concern in developing reliability statistics, the sampling strategy provided an opportunity to look at this as well. There were seven dates of joint observation. The nine observations for Kappa 1 (.72) took place during the first two joint observation days: eight of the nine observations for Kappa 5 (.67) occurred the final two joint observation days. It would appear from these data that observer drift was minimal. An example of a joint observation and the matrix for Kappa 1 may be found in Appendix D.

In addition to the six reliability samples, percentage agreement by individual category before collapsing verbal and nonverbal categories was computed. For this procedure, all 115 observations were included. Agreement, calculated as number of agreements/agreements + disagreements ranged from .18 to .74. A complete list of values may be seen in Table II.

DATA ANALYSIS

Before data analysis could proceed, a complete set of behavioral data for each subject was required. In order to accomplish this, the frequency of each of the behavioral categories and incidents of prosocial

TABLE II

RELIABILITY OF INDIVIDUAL BEHAVIORAL CATEGORIES FROM JOINT OBSERVATIONAL DATA

Number[b]	Behavioral Category	Ratio[c]	Percentage Agreement
BC1	Child not interacting + (Alone on-task)	776/1115	.70
BC2	Child not interacting - (Alone off-task)	7/22	.32
BC3	Gives + to peer verbal	54/85	.64
	nonverbal	251/337	.74
BC4	Gives - to peer verbal	22/53	.42
	nonverbal	42/85	.49
BC5	Receives + from peer verbal	3/17	.18
	nonverbal	14/50	.28
BC6	Receives - from peer verbal	11/33	.33
	nonverbal	31/66	.47
BC7	Entry/neutral interaction peer	295/453	.65
BC8	Gives + to staff verbal	2/5	.40
	nonverbal	8/31	.26
BC9	Gives - to staff verbal	1/4	.25
	nonverbal	1/5	.20
BC10	Receives + from staff verbal	15/44	.34
	nonverbal	20/34	.59
BC11	Receives - from staff verbal	4/19	.21
	nonverbal	5/10	.50
BC12	Entry/neutral interaction adult	206/334	.62

[a]N = 115 complete joint observations
[b]The frequencies of these behaviors were not adjusted so that the number of the behavioral categories are labeled BCn and not ABCn.
[c]Number of agreements/number of agreements plus number of disagreements.

behavior for that subject was multiplied by the ratio of the total intervals required (i.e., the total number of intervals each child was to have been observed) to total intervals available (i.e., the total number of intervals each child was actually observed), resulting in an adjusted behavioral category (ABC 1 - 12). For three subjects, one of twelve possible observations (18 ten-second intervals) was missing; for five subjects, nine or fewer ten-second intervals were missing; for the remaining eighteen subjects, there were complete behavioral data. This adjusted behavioral category (ABC) score was used in all analyses.

Prior to proceeding with any correlational analyses across measures, the internal consistency of the Chandler and Selman measures was examined, i.e., scores on the three Chandler cartoon stories and scores on the six issues of the friendship interview were intercorrelated to see if they were related as expected.

In general, all hypotheses were first tested by correlating the appropriate measures of perspective-taking, affective language measures, and behaviors with each other. To control for activity level of the child, the proportions of positive attention to peers (ABC3) and negative attention to peers (ABC4) to total interactive time (including interaction with both children and adults) was calculated. These proportions were then correlated with age and perspective-taking and vocabulary measures from the cognitive testing session. Since no significant relationships of activity level with these measures were found, no further analyses with proportions were conducted. In addition, a partial correlation was used to determine the relationship between perspective-taking and affective language after statistically controlling for general verbal skill. Subjects were then divided into perspective-taking (n = 11) and

non perspective-taking (n = 15) groups on the basis of their scores on the Chandler measure. A score of 2.00, the mid-point of the scale is considered a transitional level. Thus, it was decided to consider children whose scores were equal to and exceeded 3.0 in the perspective-taking group and the remaining children whose scores were less than 3.0 in the non perspective-taking group. The performance of the two groups was then compared on the various dependent variables. On the Selman measure, only four of the subjects in the sample had scores that exceeded 1.50, the maximum criterion score for level one (subjective or differentiated perspectives) as judged by the Social Reasoning Project (Selman, in press). Thus, further analyses using the Selman measure were not conducted.

In addition to dividing the subjects on the basis of perspective-taking, further t-tests were performed to determine if there were differences by examiner and program membership.

CHAPTER III

RESULTS

The purpose of this study was to relate perspective-taking skill as assessed by the Selman and Chandler measures to naturally occurring behaviors of emotionally disturbed children. It was hypothesized that perspective-takers would spend less time alone on- and off-task, give to and receive more positive attention from their peers, seek and receive less attention from staff and use significantly more affective language both in response to an affectively laden task and in their natural setting. These four possible directional relationships were supported in part or whole by the results of the study. No relationship was found between perspective-taking and anti-social behavior, the fifth area of inquiry of the study. Means and standard deviations for the perspective-taking instruments, vocabulary test, behavioral categories, prosocial behaviors, affective language measures and age may be found in Appendix E. A table of intercorrelations of all variables may be found in Appendix F.

ITEM ANALYSIS

Internal consistency of the Chandler and Selman measures was examined by intercorrelating the three cartoon tasks on the Chandler task and the six friendship issues of the Selman task. These correlations appear in Table III. The three Chandler tasks were moderately intercorrelated ($r = .53$, $p < .01$; $r = .34$, $p < .05$; $r = .32$, $p < .06$; coefficient

TABLE III

ITEM INTERCORRELATIONS FOR THE TWO PERSPECTIVE TAKING TASKS

Item Intercorrelations for the Chandler[a]

Items	Sandcastle	Broken Window	Coin
Sandcastle	-	.53**	.34*
Broken Window		-	.32
Coin			-

Item Intercorrelations for the Selman[b]

Items	Formation	Closeness & Intimacy	Trust	Jealousy	Conflict Resolution	Termination
Formation	-	.66***	.44*	.15	.40*	.43*
Closeness & Intimacy		-	.26	.12	.43*	.45*
Trust			-	.29	.41*	.50**
Jealousy				-	.52**	.15
Conflict Resolution					-	.50**
Termination						-

[a] N = 26
[b] N = 25
Note: One-tailed tests of significance. *p < .05; ** p < .01; *** p < .001

alpha = .66). Internal consistency for this measure in the literature has ranged from .26 to .91 (Enright and Lapsley, 1980). The six Selman issues were generally strongly intercorrelated (r = .12 to r = .66; coefficient alpha = .78). Internal consistency for this measure has ranged from .62 to .93 (Enright and Lapsley, 1980). One issue, jealousy, did not correlate significantly with any of the other five issues except conflict resolution. When jealousy was omitted and the remaining five friendship issues intercorrelated, correlations ranged from .39 to .66 with a coefficient alpha of .80.

PERSPECTIVE-TAKING AND BEHAVIOR

The frequencies of naturalistically observed behaviors were first correlated with cognitive measures. The sample was then divided into perspective-takers and non perspective-takers using a Chandler score of 3.0 or greater as the criterion for perspective-taking. The means and standard deviations for age and naturally observed behaviors for the perspective-taking and non perspective-taking groups may be found in Appendix G. As predicted, perspective-takers (n = 11) spent less time alone on-task than their non perspective-taking peers (n = 15) (t (24) = 2.08, $p < .03$). Contrary to predictions, however, no relationship was found between perspective-taking and alone off-task behavior.

The results regarding the relationship between perspective-taking and giving and distributing positive attention to peers were mixed. As a group, perspective-takers on the Chandler measure did not give significantly more positive attention to their peers than their non perspective-taking peers. However, when scores on the Selman measure were correlated with spontaneous incidents of sharing (a behavior coded within

the categories of giving positive attention to peers and to staff) there was a significant relationship (r (24) = .42, $p < .02$). Helping behavior was marginally correlated with the Chandler measure (r (24) = .27, $p < .09$). Sharing and helping were low frequency behaviors. Eleven of the twenty-six children were observed sharing and twenty-two of the twenty-six were observed helping. On the other hand, there was no relationship on either measure between perspective-taking and receiving positive attention from peers. When interactive behavior that was neither apparently positive or negative (Entry/neutral) was correlated with perspective-taking on the Chandler measure, there was a significant relationship (t (24) = 2.33, $p < .02$). Evidently, perspective-takers do spend more time engaged in interaction with their peers than do non perspective-takers.

The results regarding the relationship between perspective-taking and receiving positive attention from and giving positive attention to adults were also mixed. For example, perspective-takers on the Chandler measure received significantly less positive attention from adults (t (24) = 2.13, $p < .04$). Furthermore, they tended to receive less negative attention from adults (t (24) = 1.32, $p < .10$). A similar pattern of relationships was apparent in the correlations of these behavior categories with the Selman measure. Children with higher role-taking scores on this measure tended to receive both less positive (r (24) = -.39, $p < .03$) and less negative (r (24) = -.27, $p < .10$) attention from adults. The relationship between perspective-taking and giving positive attention to adults, however, was only marginally significant (t (24) = 1.58, $p < .07$) on the Chandler measure, and nonsignificant on the Selman measure. Furthermore, performance on neither perspective-taking measure correlated

with giving negative attention to adults. In contrast to the results regarding interaction with peers, there appeared to be no relationship between perspective-taking and interactive behavior that was not apparently positive or negative (Entry/neutral) with adults.

Perspective-takers on the Chandler measure did use a significantly larger vocabulary (variety) of affective words than did non perspective-takers in response to the cartoon task stimuli (t (24) = 1.92, $p < .05$). The relationship of perspective-taking to variety of affective words did not decline when general verbal skill was partialled from the correlation (r (24) = .37, $p < .05$). However, the frequency of affective words used by perspective-takers in response to the Chandler cartoon task stimuli was not significantly different from use by non perspective-takers. Nor were these affective language measures correlated with performance on the Selman measure. Finally, when the use of affective words in the naturalistically observed settings was compared with performance on the two perspective-taking measures, there was no relationship.

Neither antisocial category of behavior, i.e., gives negative attention with respect to the relationship between antisocial behavior and perspective-taking, to peer or, as discussed earlier gives negative attention to staff, was significantly correlated with perspective-taking.

PERSPECTIVE-TAKING, AGE AND INTELLIGENCE

Conceptually, one expects a positive relationship between perspective-taking and age, since the perspective-taking construct is a developmental phenomenon. The relationship between age and scores on the Selman and Chandler measures was confirmed in this study (r (24) = .52, $p < .01$; r (24) = .35, $p < .05$) respectively. Moderate correlations of

perspective-taking with intelligence have also been reported (Chandler, 1973; Turnure, 1975), typically using PPVT as a measure of verbal IQ. In the present study, the scores obtained from this instrument have been used more conservatively as a measure of vocabulary. In contrast to previous studies, the relationship between perspective-taking and intelligence was not supported here.

EXAMINER AND PROGRAM EFFECTS

Several checks on effects of program membership and examiner were performed. Children in the residential program gave more positive attention to staff (t (24) = 2.43, $p < .05$), engaged in more interactive behavior not apparently positive or negative (Entry/neutral) with staff (t (24) = 1.77, $p < .05$), and cooperated more (t (24) = 2.67, $p < .01$) than children in the day treatment program (this latter finding probably reflects the choice of a game as the organized activity for the afternoon). Day treatment children spent more time alone on-task than residential treatment children (t (24) = 2.08, $p < .05$).

Examiner effects were also probed. On one cognitive measure, the Chandler, higher scores were elicited by one of the examiners (r (24) = .58, $p < .001$). There was no relationship between examiner and the Selman, PPVT, variety or frequency of affective words.

CHAPTER IV

DISCUSSION

The results of this study provide some support for the relationship between the social cognitive skill of perspective-taking and interactive behavior in a disturbed population. As hypothesized, children who demonstrated perspective-taking on the Chandler cartoon task spent less time alone on-task (i.e., they were present with another child but not interacting) than their non perspective-taking peers. In this study, if a child was not alone on-or off-task, he was interacting with other children or adults. Thus, these results are consistent with how it is generally believed social perspective-taking develops. Children who engage in interactive behavior with others are in a sense engaged with raw material for this developmental process. For Piagetian and other developmental psychologists who have followed and elaborated his theory, the individual is continually adapting his thinking to his experience and his experience to his thinking. In the area of developing social cognition, the young child interacts with peers such that he moves into the realization (level one in the Selman typology and level four on the Chandler instrument) that different people may have different ideas and attitudes about events and things, i.e., that the other is a subjective being. This understanding is not possible unless the child's view (perspective) has been challenged in contact with the raw material of other's perspectives.

Eventually, through contact with peers young children learn that

one person's thinking can include another's as its object. The result is a reciprocal influence on thinking in a social interaction, i.e., the awareness that the other is thinking about the self's thinking is likely to alter the point of view of the self. In discussing the Selman model, Flavell "translates" level two social perspective-taking in this way:

> The fundamental insight of level two may come down to this: I know I could conceivably tune in on your cognitive perspective because we are both subjects or persons rather than objects; I also know that you could do the same for the same reason; it follows that you may be doing so at the very moment I am, and that your tuning may therefore pick up my tuning (p. 133-134).

Few children in this study were capable of this level of reasoning. In fact the average of the subjects responses on the Selman measure was at level one.

The "alone" behavioral categories in this study were not so finely drawn as to permit an operational definition or clinical description of a "withdrawn" child. Nonetheless, non-interaction is a generic description of a wide range of behavior from the benign to the pathological e.g., from the "quiet" to the "autistic" child. Waterman et al (1981) using a clinically sensitive rating scale, did find that children in the emotionally disturbed group who were rated as withdrawn demonstrated significantly lower perspective-taking skills. This was not true, however, of the children rated as withdrawn in the normal and learning disabled groups in their study. Since the present study did not employ a clinically sensitive behavioral measure nor was there a comparison group of children from the normal population, it is not known whether the relationship between perspective-taking and solitary behavior would be found in normal children.

Although a significant relationship between perspective-taking and

alone on-task behavior was found, there was no relationship with alone off-task behavior. The most likely explanation for this lack of relationship is the restricted range of occurrence of the latter behavior. It should be remembered that while the time for observation was chosen because of its less-structured nature, this was relative to the environment of a treatment facility for behaviorally disordered children. If one were to compare these settings to comparably labeled settings in the public school, i.e., lunch, freetime (particularly indoors) and an organized art activity, for instance, one would say they were quite structured. Expectations for kinds of behavior, e.g., remaining in one's seat, hands on own materials, permission required to get up from lunch table to bus one's dishes, were articulated clearly for these children and children were consequated for following these expectations. Thus, there may have been a narrower range of off-task behaviors tolerated and consequently coded in this environment. In addition, alone off-task behavior was narrowly defined to minimize disagreement between observers. Unfortunately, agreement was low (.32). In order to have one's behavior coded as alone off-task, the child needed to clearly fail to follow expectations. One child, for example, while waiting for feedback from staff at the end of the lunch period, tore up his feedback sheet and began stuffing it in his mouth. Occasionally children engaged in a kind of self-stimulation where they made inappropriate noises with their mouths. These examples were coded alone off-task. When the focal child was expected to listen to an adult for instructions or feedback, observable evidence of distraction, daydreaming, or noncompliance was necessary. Playing with an object under the table, or inactivity in response to a request for clean-up, were coded as alone off-task. These alone off-task behaviors were

rarely observed in the present study.

The results of this study provide limited support for the relationship between perspective-taking and giving positive attention to peers. It is assumed that children in this emotionally disturbed population have not learned the social skills and value of distributing positive reinforcement to their peers in order to better negotiate their needs. On the contrary, when positive reinforcement is given to a peer, it may have anti-social consequences and no negotiating value at all for the individual. Those who work with behaviorally disordered children (or children, in general, for that matter) have observed how harrassment of another child, or disruption of the group over which an adult is seeking control, or engaging in alone off-task behavior may elicit positive reinforcement from others in the group. In this agency, it was not uncommon to observe a child care worker call attention to this process and actively discourage it by physically separating children, or by giving positive reinforcement to others in the group not engaged in delivering the positive reinforcement inappropriately. Because the foregoing was true the general category of distributing positive reinforcement was further defined so that specific prosocial behaviors could be included in the coding strategy.

The prosocial behavior of sharing did correlate with the Selman perspective-taking measure. Helping behavior also tended to be related to the Chandler perspective-taking measure. The fact that observed incidents of sharing and, to a lesser extent, helping, but not comforting or cooperating were correlated with perspective-taking is consistent with work conducted by Youniss (1975) who was particularly interested in children's concept of kindness. He asked children in grades kindergarten, one, four and seven to construct spontaneous stories in response to three

topics: showing that you like someone; showing someone that you are friends; and being kind to someone. Of interest here are responses to the second topic, in that content of these responses, would resemble content of responses to the Selman friendship interview used in the present study. Indeed, a hierarchy of prosocial responses was offered across the age span of the subjects in the study. Young children associated sharing with friendship, children in the middle age group added the offering of help to someone who is in trouble as a way of showing someone you are a friend, and older children introduced the idea that friends share feelings and thoughts, a process that may be close to comforting as it was defined here. There are close parallels between the kind of responses elicited in Youniss' study and responses to the Selman measure used here. However, the structured probes of the Selman measure were designed so that certain ideas such as "assistance" are introduced by the examiner, e.g., "What do good friends do for each other?" (emphasis added), whereas in the Youniss study, the idea of offering assistance was spontaneous. Although in the present study there was some concern that the probe, "What do good friends do for each other?" might elicit a spuriously high response, it was interesting to note that children who had not yet achieved level one thinking were not able to hear the preposition for and responded to the question as if it had been worded, "What do good friends do with each other?" Children who were not conceptually ready to construct reality at the next higher level were not about to be lured there by a persistent interviewer.

There is a logical breach here that should be noted but needn't weaken the possibility that the present study ecologically validates the relationship between perspective-taking and sharing and helping behavior.

Children's understanding of interpersonal relations, of which the understanding of close dyadic friendships is one domain, is predicated on their ability to coordinate social perspectives. Thus, a child who responds to the above question with "Helps pick up their toys," is a child at social perspective-taking level one. The assumption one must make to close the breach is that children who spontaneously mentioned the giving of help as a way of showing friendship in the Youniss study would likely have responded similarly to the more direct probe "What do good friends do for each other?" from the Selman friendship interview had it been administered and would be considered level one perspective-takers. The present study related perspective-taking to observed incidents of sharing and helping. For example, children were observed sharing a special snack or sharing a pattern for an art project. They spontaneously helped by doing such things as arranging balls so that the group could begin a pool game; by asking a peer struggling with a can, "Do you want me to open that?"; or offering to a friend who is building a fort in the dayroom during freetime, "Do you want me to bring the pillows?" Children responded to requests for help by doing such things as passing food to a neighbor or bringing art supplies to a staff person.

Although it was found that one prosocial behavior was significantly correlated with perspective-taking and another approached significance, there was no relationship between perspective-taking and receiving positive attention from peers. The earlier explanation of positive reinforcement of each other in this population may also apply here. The receipt of positive reinforcement from peers is not contingent upon demonstration of socially competent behavior and for this reason may not bear a direct relationship to perspective-taking.

A relationship between perspective-taking and neutral interaction with peers (Entry/neutral category in which the behavior coded is apparently neither positive or negative) had not been explicitly hypothesized. Attention was focused on valent interaction and not simply on neutral peer interaction. In the interests of an exhaustive (albeit not exclusive) behavioral code, this category was necessary. Consistent with the Piagetian analysis of cognitive development, children in this study who demonstrated they could "stand in the other's shoes," were children who interacted more with their peers than children who were less able to assume the perspective of the other. This particular finding is interesting in light of the earlier O'Connor study (1977) where it was found that role-taking training did not produce a significantly increased preference for interaction with peers rather than adults in comparison to a placebo group not trained in role-taking. The O'Connor study was conducted with preschoolers, an age group when perspective-taking ability is nascent. It would appear from the results of the present study that the relationship between peer interaction and perspective-taking in older children does exist - at least in the disturbed population that participated in this study. To the author's knowledge, this relationship had not been demonstrated through systematic observation of children in their natural setting until the present study.

The hypothesis that perspective-takers would distribute to and receive significantly less attention from adults was supported only for receipt of adult attention. Distribution of attention to adults was marginally negatively related to only one of the perspective-taking measures. It was notable that the negative correlation between perspective-taking and receipt of adult attention occurred at all. Because this

is an agency for behaviorally disordered children, staff are alert to opportunities to positively reinforce children who are behaving in socially competent and desirable ways. For example, when a child shared his materials during an art project, the staff person was recorded as saying "Nice sharing." Presumably, in this environment of contingency control, presocial behavior may be precisely that kind of behavior most likely to receive positive attention from adults. In this study, perspectival children were more likely to engage in acts of sharing (and helping) which would have attenuated the strength of the negative relationship had adult responses to incidents of sharing and helping by the focal child occurred and been recorded. One might speculate that the negative correlation between perspective-taking and receiving positive attention from adults in the inconsistently contingent environment of the real world may be even stronger than is apparent from this data.

The hypothesis that perspective-takers will use more affective language in response to an affectively laden story received support in this study. Both variety and frequency of affective word use in response to the Chandler stimuli were examined. The more salient of the expected relationships, i.e., variety (Naffect) obtained even when general verbal skill was partialled from the results. Aside from the simple working affective labels used by the examiner, e.g., mad, sad and scared, subjects provided such words as proud, surprised, feeling weird, frustrated, ashamed, frightening. On the other hand, it is not surprising that the frequency measure did not correlate with perspective-taking. Repetition of the same affective work would not necessarily be equated with an ability to sensitively identify other's affective states. On the contrary, it is conceivable, that repetition reflects the inability to do so.

That the variety of affective language is the most salient measure is suggested by Feshbach's (as cited in Mussen and Eisenberg-berg, 1977, p. 126) three-component definition of emphathy, a term that at one time was used synonymously in the literature for role-taking. In this definition, the first component is the ability to discriminate and label affectives states of others; the second component is the ability to assume the perspective and role of another person; the third component is emotional responsiveness. Children whose affective vocabulary is broad are more likely able to label affective states of others effectively and thus, have the first component necessary for role-taking.

Functionally, the perspectival child was no more likely to use this enriched affective vocabulary in his natural setting than the non-perspectival child. There was no relationship between perspective-taking and affective word use recorded during the 36 minutes of observation for each child. It is not known if this is true of normal children were they to be observed under similar conditions. One might speculate that the failure to generalize and use affective identification skills from the laboratory stimuli to the natural setting is one of the factors that contributes to the behavioral deficits found in these children.

As has been suggested, moderate correlations of perspective-taking with intelligence have been reported in disturbed and normal populations. This relationship was not supported by the results of this study. Shantz (1975), in her review of the development of social cognition, points out that the relationship between intelligence and perspective-taking varies with gender of the child, socioeconomic status and type of intelligence test (verbal vs. non-verbal). For example, Burka and Glenwick (1978), using the California Mental Maturity Test and the Chandler measure, found

a negative relationship between egocentrism and intelligence for boys (r = -.40), but no relationship for girls Turnure (1975), using the PPVT with the youngest of the three normal experimental groups (7-year olds), found correlations for boys and girls with a role-taking task not unlike the Chandler measure (r = .60 for boys and r = .78 for girls). There was no relationship for the 9-year old boys and girls between IQ and role-taking using a different IQ measure, the Kuhlman Anderson, but there was a significant correlation between role-taking and the Kuhlman Anderson IQ for the 12-year old boys, the third experimental group in Turnure's study. Kurdek (1977), whose study was also conducted with normal children between the ages of six and a half and almost ten, found significant correlations between a non-verbal IQ measure, the Ravens Progressive Matrices and the Chandler measure (r = .51) and a Selman socio-moral dilemma (r = .38). It had been expected that there would be a relationship between the verbal IQ test and the perspective-taking measures used in this study in that all three require a facility with language in order to respond. However, as indicated above, the literature includes such a range of role-taking measures as well as IQ tests that any statements regarding the relationship of the constructs of intelligence and perspective-taking need to be guarded. Furthermore, the literature on perspective-taking in disturbed populations is limited when compared to the work performed to date with normal children. Thus, information regarding IQ and perspective-taking in this population is limited as well. Recently, however, Waterman *et al.* (1981) found that both cognitive and affective perspective-taking measures correlated with a verbal measure of IQ in their emotionally disturbed group (r = .28 and r = .30 respectively), but not in their normal group. However, they

found significant differences in intelligence between their groups. The emotionally disturbed group, on the average scored lower on the IQ measure than either the learning disabled or normal groups of children. It will be remembered that subjects in the present study were of normal intelligence thus making the results of the present study not inconsistent with those of the Waterman study.

Perspective-taking training has emerged as one of the social-cognitive interventions available for work with disturbed and delinquent populations (Urbain and Kendall, 1980; Selman, 1980; Elardo and Caldwell, 1976). In that the present study was conducted with a disturbed population, it sought to establish relationships between perspective-taking and general descriptions of interactive behavior that would validate the appropriateness of such an intervention with this population. The results of this study suggest that such remediation may be appropriate for the withdrawn child but lends little support for remediation with the child who is antisocial. In fact, there is some literature to suggest that cognitive perspective-taking competence is associated with antisocial behavior (Silvern, 1976; Kurdek, 1978). It is intuitively reasonable that the ability to imagine what the other is thinking or feeling is a valuable skill for the "con" artist, the successful politician, indeed, for any individual intending to persuade another.

Perspective-taking training, while not seen as a primary intervention strategy with antisocial children may have applications as one of a constellation of strategies with some specific behavioral disorders. For the impulsive, out-of-control child, role-taking training may be an appropriate adjunct to the self-instruction techniques originally descirbed by Meichenbaum and Goodman (1971) which can help the child cope

directly with the unwanted behavior. The first question the child learns to ask is "What is my problem?" Clearly, practice in perspective-taking will help the child accurately label other's reactions as well as his own in potentially threatening (to himself and others) situations. Kendall & Zupan (1981) have reported an increase in role-taking (using the Chandler measure) and self-control in children described as hyperactive, aggressive, acting-out and exhibiting conduct problems, after a 12-session intervention that incorporated role-taking training along with self-control instruction. Role-taking training appears to contribute to successful treatment outcomes when it is used selectively and in conjunction with other intervention strategies.

It can be seen that the relationship between perspective-taking and affective vocabulary is important to the discussion of intervention. Whether the available affective vocabulary nurtures the cognitive skill or vice versa can't be known from this study. The use of affective language is sparse in this population. One could speculate that limited usage of affective words is caused by a modeling deficit, i.e., these words and the range of emotional responses they represent aren't available in the child's home. On the other hand their use may be aversive to the child or repressed in that this cognitions and feelings have been denied by an important adult in his life. Consider, for example, the sexually abused child for whom some important affective labels may have distorted connotations. In the therapeutic milieu, behavioral or otherwise, dependable relationships between affective labels and behaviors expressed are established for the child. These relationships are the basis of trust which develops between the child and care-giver. Perspective-taking training enlarges the available sample space of affective

states of the child's experience, thus accelerating the expansion of the child's social reality. Damon (1979), in his discussion of Piaget's later writings on intellectual development points out that Piaget did not restrict egocentrism to one stage of life. Decentering, according to Piaget, allows one to overcome these self-other confusions and establish an equilibrium among several perspectives. Damon describes it as a reality-exploring activity (Damon, 1979, p. 307). Through perspective-taking training a child can explore affective states more widely than his own experience alone would permit.

This study suggests that a child's stage of social cognitive development has a verifiable relationship to some general patterns of the child's behavior. The level of analysis was molar. The positive, negative and neutral quality of children's alone, peer and adult interaction were examined in relation to the child's ability to assume the other's perspective. It was appropriate to consider behavior at this level for the construct under examination, social perspective-taking is viewed as an organizing principle for the child's understanding of his social experience and not seen as a narrow concept space relevant to only a portion of the child's social behavior. The area of study which looks at the relationship between what people think and what they do has been fruitful for psychological research. It is only recently that the meeting ground has been attended by the cognitive developmental psychologists and the behavioral psychologists together. The degree to which the topography of the child's behavior reflects his/her internal understanding is so affected by the child's experience that sometimes the link is indistinguishable and cause is most appropriately identified in the immediate context of the situation. Nonetheless, this study suggests that across

situations in natural settings, perspective-taking ability may have predictive value for the quality and target of the child's interaction.

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FOOTNOTES

[1]Note that this scoring reverses the direction of the original Chandler measure.

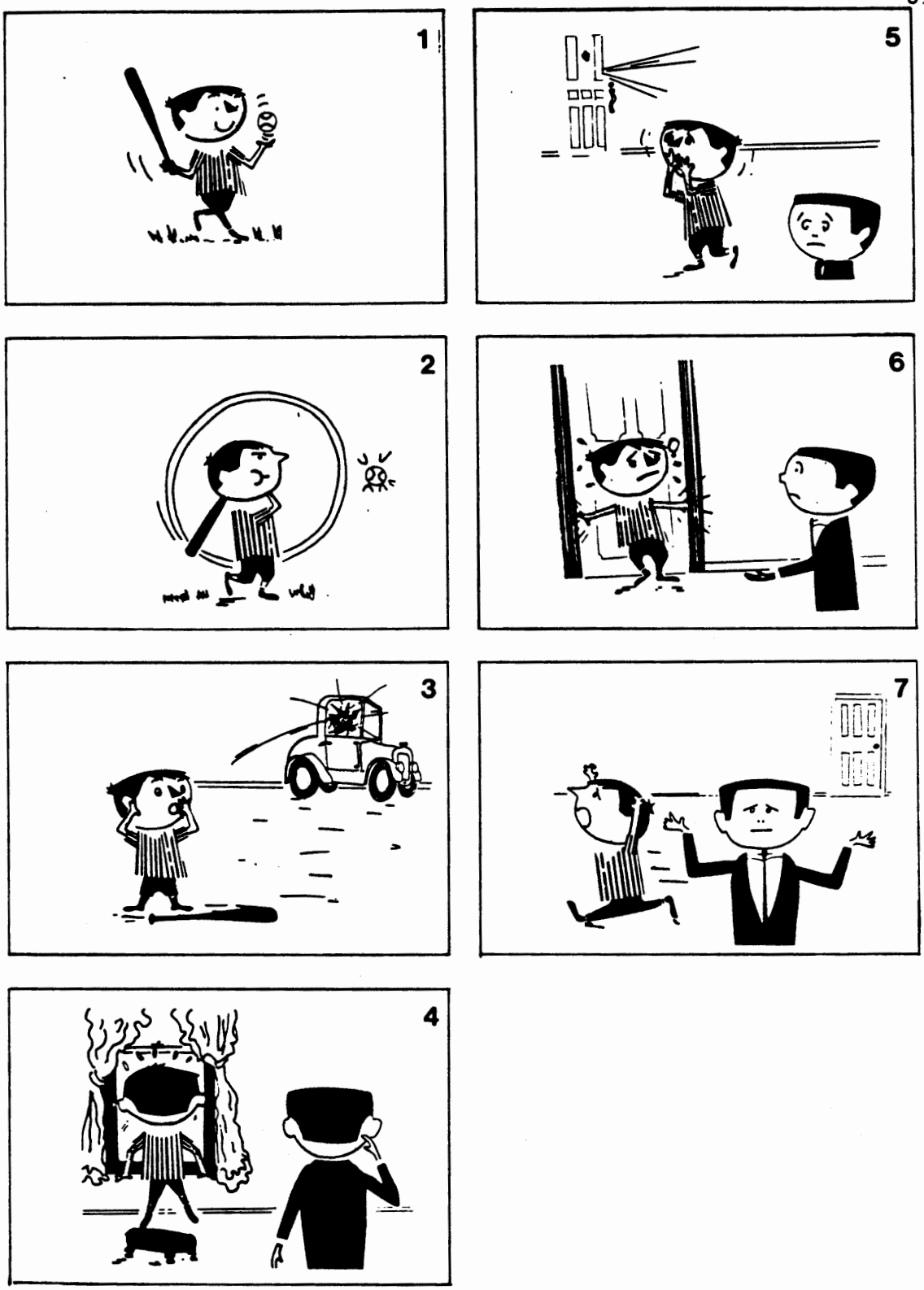
[2]Four early subjects were administered a slightly different version of the questions before it was decided to adhere to the Selman format. Responses were scored in the same manner as those of the remaining subjects.

[3]The sampling strategy for the calculation of interobserver reliability was suggested by Jim Paulson.

[4]The behavioral code in this study did not contain mutually exclusive categories as required for probabilistic (F/BC) or percentage of test time interpretations. However, priority coding was employed in order to approach the criterion of exclusivity. The proportion of double entries for each subject's behavioral data set was calculated. These proportions ranged from .005 to .286 with a mean of .076 and a standard deviation of .057.

APPENDIX A

STIMULUS MATERIALS



Broken Window Story. From Chandler (1973).

Sandcastle Story. From Chandler (1973).

INSTRUCTIONS FOR ADMINISTERING THE CHANDLER MEASURE

Spontaneous story

I am going to show you some cartoons like the ones in the comic strips and have you tell me what is happening in each story. I want to find out how people your age understand such cartoons.

Go slowly, look at all the pictures and then tell me what the whole thing is about. I'm particularly interested in what the cartoon characters are thinking and feeling. So pay special attention to what they're thinking and feeling.

I don't want to miss any part of your story so I'm going to write it down. I'm also going to tape it. You'll need to go slowly so I can get everything down.

Do you understand what you're supposed to do?

O.K. Here's the first cartoon. Look at the whole thing before starting your story. Remember to pay special attention to what the people in the pictures are thinking and feeling. To make it a little easier, let's give the boy a name. Let's call him_____.

What's happening in the first picture?

Bystander Story

Now, I want you to begin again with this card (having taken away all the pictures before the bystander is introduced) and tell me the story the (Baby brother, Friend, Dad) would tell. O.K. (Baby brother, Friend, Dad) is telling the story. What would he say the little boy is

thinking and feeling?

Note: These instructions were adapted from the Chandler (1973) manual.

The Friends Dilemma - Children's version

Kathy and Becky have been best friends since they were five years old. They went to the same kindergarten and have been in the same class ever since. Every Saturday they would try to do something special together, go to the park or the store, or play something special at home. They always had a good time with each other.

One day a new girl, Jeanette, moved into their neighborhood and soon introduced herself to Kathy and Becky. Right away Jeanette and Kathy seemed to hit it off very well. They talked about where Jeanette was from and the things she could be doing in her new town. Becky, on the other hand, didn't seem to like Jeanette very well. She thought Jeanette was a showoff, but was also jealous of all the attention Kathy was giving Jeanette.

When Jeanette left the other two alone, Becky told Kathy how she felt about Jeanette. "What did you think of her, Kathy? I thought she was kind of pushy, butting in on us like that."

"Come on, Becky. She's new in town and just trying to make friends. The least we can do is be nice to her."

"Yeah, but that doesn't mean we have to be friends with her," replied Becky. Anyway, what would you like to do this Saturday? You know those old puppets of mine, I thought we could fix them up and make our own puppet show."

"Sure, Becky, that sounds great," said Kathy. "I'll be over after lunch. I better go home now. See you tomorrow."

Later that evening Jeanette called Kathy and surprised her with an invitation to the circus, the last show before it left town. The only problem was that the circus happened to be at the same time that Kathy had promised to go to Becky's. Kathy didn't know what to do, go to the circus and leave her best friend alone, or stick with her best friend and miss a good time.

STRUCTURED PROBES FOR THE SELMAN FRIENDSHIP INTERVIEW

OPEN-ENDED PROBES

A. What do you think the problem is in this story?

B. What do you think Kathy will do, choose to be with her old friend Becky or go with the new girl Jeanette? Why?

ISSUES

I. Formation

A. Why are friends important?

B. Is it easy or hard to make a good friend? How do you go about making a new friend?

C. What kind of a person makes a good friend?

II. Closeness and Intimacy

Different types of friendships and factors which make for close and affectionate friendships.

A. What kind of friendship do you think Kathy and Becky have? What is a really good close friendship?

B. What kinds of things can good friends talk about that other friends sometimes can't?

C. Are there different kinds of friendship?

III. Trust and Reciprocity

The value and nature of trust and reciprocity in a close friendship.

A. What kinds of things do good friends, like Becky and Kathy do for each other?

B. Do you think trust is important for a good friendship? Why?

C. What is trust anyway?

IV. Jealousy

The nature of jealousy and its effects on friendship.

A. How do you think Becky feels about the new friendship? Do you think she might get jealous?

B. What does it mean to be jealous in a friendship?

V. Conflict Resolution

How arguments or conflicts are settled between good friends and the effect of arguments on friendships.

A. Can people be friends even if they are having arguments? How is that possible?

B. How should arguments be settled between good friends?

C. What kinds of things do good friends sometimes fight or argue about?

VI. Termination

How and why close friendships break up.

A. What makes friendships break up?

B. What does a person lose when they lose a good friend?

C. Why is it that good friends sometimes grow apart?

Note: For the friendship interview to be conducted as per instructions from the Social Reasoning Project (Selman, 1979), the above questions must be asked. Other probes were available and were occasionally used.

APPENDIX B

SCORING SYSTEMS

Scoring Instructions for the Chandler*

Stage 0

A score of "0" is assigned to those stories in which no recognition is given to the fact that the S and the bystander have access to different amounts of information and where the S explicitly attributes to the only partially informed bystander knowledge of details which could only be known to himself.

Examples

(S) After he asked her to play baseball, he decided his coin was more important.

(S) He thinking, "Just because somebody knocked down his castle, he doesn't have any right to knock mine down." He thinks that the person that knocked down his brother's castle was not being very nice, and now his own is down."

(E) And what do you think the (bystander) is thinking?
(S) What happened to it? (the nickel)

(E) Why does the baby brother think his brother is mad?
(S) Because the girl ran over his sandcastle?

(E) Who did Dad think was at the door?
(S) Tom (the Dad) wants to know who broke the truck.

(S) ...and the cards are all made up just like his sandcastle.

(E) Why did baby brother say Steven was feeling mad?
(S) Cause his sister runned over her (sic) sandcastle, too.

(S) When he blows it down, Jacob (the baby) would probably be real sad just how Arman was about his sandcastle.
(E) What does the baby think the hero is angry about?
(S) Probably doesn't know.

(S) George is getting up and still crying and he's going over to find his coin.

(S) Now George is mad because he blew the (card) castle down cause thought that baby ran over the sandcastle.

(S) Joey is feeling angry cause he wants his coin back.

(S) Baby brother thought of an idea. Baby brother thought that his sister knocked Jason's castle down and he was right.

Stage 1

A score of "1" is assigned to stories in which unwarranted attributions of privileged information are made, but where these egocentric intrusions are couched in probabilistic or conditional language suggestive of some uncertainty regarding the comparability of the two perspectives which the S is required to adopt. Definite intrusions occur, but no mention of specific circumstances is made, e.g., no mention of sandcastle, broken window or coin unless stated conditionally.

Examples

(E) How is the little boy feeling about his brother knocking his card house down?
(S) Understanding?

(S) The father would probably think that he broke the window.

(S) Maybe he knew about his coin.

(E) What is the Dad feeling here?
(S) Angry.
(E) What do you suppose he's thinking there?
(S) About spanking him.

(S) Baby thinks Ralph is mad because something his sister did.

(S) Kid thinks Ben is thinking about something he lost.

(S) Dad thinks Jason is in trouble cause he hit something with his baseball.

(S) What the heck, you lost a dime or somethin?

Stage 2

A score of "2" is assigned whenever the S offers, as descriptive of the bystander's point of view, a field of alternative explanations, one of which explicitly includes elements of privileged information available to the subject, but not to the only partially informed witness. Can include an "I don't know" response or nonegocentric responses to probes. Can also include confusion of perspectives. Confusion may include gross intrusion and other responses that are nonegocentric with a rationale.

Examples

(S) The father would think that someone was chasing him, or that he broke a window or something.

(E) Okay, and how do you think the little kid feels?
(S) I don't know. I think he feels mixed up.

(E) What would Ty say happened here?
(S) That he lost his boats (?) or his coin.

(E) Why is George crying?
(S) He lost his coin.
(E) Why would his friend say George is crying?
(S) I don't know. Because, maybe because..... he don't have a mitt.
(E) What would George's friend say is happening in this picture here?
(S) That he's getting up and he's still crying and he walks over to find his coin.
(E) That's what George's friend would say is happening?
(S) Uh-Hum. (Yes)

Stage 3

Stories assigned a score of "3" are those which, while essentially free of gross egocentric intrusions, may include peripheral or incidental elements of privileged information available only to the S which "contaminate" the bystander's report.

Examples

(S) Thought that John didn't want the man at the door to see him.

(S) Dad is upset (mad) about whatever he did.

(S) Bobby's feeling sad cause he gonna get in trouble by the way the man's pounding at the door. Bobby's trying to run from someone - don't know why.

(E) What would the brother say Chris is feeling there?
(S) Probably hope he doesn't want to get in trouble.
(E) Probes
(S) He doesn't want to open the door cause someone was gonna beat him up.

(S) George is scared that someone is coming to get him.

(S) Dad would be thinking something scary happened. By then he'd probably know that maybe something scary happened like someone started hitting him when he was out or something.

Stage 4

A score of "4" is assigned to those stories which reflect the S's awareness that the bystander exposed to less information than himself, would be led to sharply different conclusions regarding the chain of events depicted. Stories coded in this category contain no evidence of direct or indirect intrusion of unavailable or privileged information. There is a presence of sharply different perspectives, i.e., there may be a good rationale for the emotion which does not involve an egocentric intrusion, or acknowledgement of confusion or lack of knowledge. Some portrayal of bystander's point of view may be present.

Examples

(S) The little boy can't figure out why his brother knocked down his card house. He worked really hard on it and he thought his big brother would like it, but he didn't like it, so he knocked it down. The little boy is thinking, "Usually he likes my things. I wonder why he didn't like this one," and he wanted to talk to his brother about it.

(S) The little brother is totally confused about why his brother knocked down his card house. He was very proud and feeling good, then his brother knocked it down and now he is feeling confused and scared because his brother was being so mean to him.

(S) The girl starts crying and the baseball player can't figure out why. He says to himself "She usually plays with me, and now she is crying. I wonder if I did something but I don't know what I could have done."

*Note: Definitions were adapted from Chandler (1973). Examples were drawn from pilot data.

SCALE POINTS ON THE SELMAN MEASURE

A. Developmental levels in the coordination of social perspectives (relation between perspectives of self and others). *	B. Stages of reflective understanding of close dyadis friendships.	C. Examples from the data in the current study.
Level 0: Egocentric or undifferentiated perspectives. Although the children can recognize the reality of subjective perspectives (e.g., thoughts and feelings) within the self and within others, because they do not clearly distinguish their own perspective from that of others, they do not recognize that another may interpret similarly perceived social experiences or courses of action differently from the way	Stage 0: Momentary physicalistic playments. Conceptions of friendship relations are based on thinking which focuses upon propinquity and proximity (i.e., physicalistic parameters) to the exclusion of others. A close friend is someone who lives close by and with whom the self happens to be playing with at the moment. Friendship is more accurately playmateship. Issues such as jealousy or the intrusion of a third party into a play situation are constructed by	(How're you going to settle fights?) Go somewhere else, go the field or something, I'd go to the field, he'd go somewhere else. (Oh, so if you're having a fight, you split up?) Yeah. (Why do good friends sometimes grow apart.) Because like, one might have to go to another school.

they do. Similarly, there is still some confusion between the subjective (or psychological) and objective (or physical) aspects of the social world, for example, between feelings and overt acts, or between intentional and unintentional acts. (Roughly ages 3 to 7.)

the child at Stage 0 as specific fights over specific toys or space rather than as conflicts which involve personal feelings or interpersonal affection.

Level 1: Subjective or differentiated perspectives. The child understands that even under similarly perceived social circumstances the self and others' perspectives may be either the same or different from each other's. Similarly, the child realizes that the self and other

Stage 1: One-way assistance. Friendship conceptions are one-way in the sense that a friend is seen as important because he or she performs specific activities that the self wants accomplished. In other words, one person's attitude is unreflectively set up as a standard, and the "friend's"

(Why do you think friends are important?) If you really didn't have any friends, and someone got mad at you, you wouldn't have no one to help you and then they would just go off or something like that.
(Why are friends important to you?) They take up my time sometimes.

may view similarly perceived actions as reflections of disparate or distinct individual reasons or motives. Of particular importance, the child at Level 1 is newly concerned with the uniqueness of the covert, psychological life of each person. (Roughly ages 4 to 9.)	actions must match the standard thus formulated. A close friend is someone with more than Stage 0 demographic credentials; a close friend is someone who is known better than other persons. "Knowing" means accurate knowledge of other's likes and dislikes.	(Why do you need a good friend?) Someone just to talk to.
Level 2: Self-reflective or reciprocal perspectives. Children are able to reflect on their own thoughts and feelings from another's perspective - to put themselves in the other's shoes and to see the self as a subject to other. This new understanding of the relation between self and	Stage 2: Fair-weather cooperation. The advance of Stage 2 friendships over the previous stages is based on the new awareness of interpersonal perspectives as reciprocal. The two-way nature of friendships is exemplified by concerns for coordinating and approximating, through adjust-	(Why do you think friends are important?) Because if you don't have no friends, you'd like, you'd like be sort of like left out, because nobody would like you. (Uh huh) And then, um, and them, nobody would like you and that would take all the fun out of like, if nobody liked you.

other's perspective allows children to consider their own conceptions and evaluations of others' thoughts and actions. In other words, children are able to take a second-person perspective, which leads to an awareness of a new form of reciprocity, a reciprocity of thought and feelings rather than a reciprocity of action. (Roughly ages 6 to 12.)

ment by both self and other, the specific likes and dislikes of self and other, rather than matching one person's actions to the other's fixed standard of expectation. The limitation of this Stage is the discontinuity of these reciprocal expectations. Friendship at Stage 2 is fair-weather - specific arguments are seen as severing the relationship although both parties may still have affection for one another inside. The coordination of attidues at the moment defines the relation. No underlying continuty is seen to exist that can maintain the relation during the per-

(Do you think people can be friends even though they're having arguments?) Yeah, they could, because they could make it up to each other.

iod of conflict or adjustment.

Level 3: Third-person or mutual perspectives. The subject at Level 3, aware of the infinite regress potential of the chaining of reciprocal perspectives, moves to a qualitatively new level of coordination, an understanding of the person's ability to step outside of an interpersonal interaction and coordinate simultaneously the perspectives of each party in the interaction. This ability to take the third-person perspective leads to the awareness of the mutuality of human perspectives and hence of the self-other relationship. (Roughly

Stage 3: Intimate and mutually shared relationships. At Stage 3 there is the awareness of both a continuity of relation and affective bonding between close friends. The importance of friendship does not rest only upon the fact that the self is bored or lonely; at Stage 3, friendships are seen as a basic means of developing mutual intimacy and mutual support; friends share personal problems. The occurrence of conflicts between friends does not mean the suspension of the relationship, because the underlying continuity

(What kinds of things do good friends talk about that other friends sometimes can't?) Family problems. For me, I'd rather talk to my friends sometimes than with my mom.

(How do you think Becky feels about the new friendship Kathy and Jeanette were making?) Not very good. She didn't want it that way. She wanted just the two of them. (Do you think she was jealous? What does it mean to be jealous in a friendship?) If you think they're playing with the other friend more.

ages 9 to 15.)	between partners is seen as a means of transcending foul-weather incidents. The limitations of Stage 3 conceptions derive from the overemphasis of the two-person clique and the possessiveness that arises out of the realization that close relations are difficult to form and to maintain.
Level 4: Societal or in-depth** perspectives. The subject conceptualizes subjective perspectives of persons toward one another (mutuality) to exist not only on the plane of common expectations or awareness, but also simultaneously at multidimensional	Stage 4: Autonomous interdependent friendships. The interdependence that characterizes Stage 4 is the sense that a friendship can continue to grow and be transformed through each partner's ability to synthesize feelings of independence and dependence.

or deeper levels of communication. For example, perspectives between two persons can be shared on the level of superficial information, on the level of common interests, or on the level of deeper and unverbalized feelings. Also, perspectives among persons are seen as forming a network or system. These perspectives become generalized - e.g., into the concept of society's perspective or the legal or moral point of view. (Roughly age 12 to adulthood.)

Independence means that each person accepts the other's need to establish relations with others and to grow through such experiences. Dependence reflects the awareness that friends must rely on each other for psychological support, to draw strength from each other, and to gain a sense of self-identification through identification with the other as a significant person whose relation to the self is distinct from those with whom one has less meaningful relations.

* Note: Definitions were taken from Selman, 1979.

** No examples of level four were recorded for subjects in this study.

APPENDIX C

OBSERVATIONAL DATA MATERIALS

Observation Rules

1. The focus of interest in this study is interactive behavior. Thus, coding the focal child cannot begin until he is available for interaction (present and not in "time out") and one other child is available for interaction.
2. Locate child on your list. If not present, go on to the next child. Write down the name of child, time and date (complete information i.e., setting and your name as soon as possible, if you cannot do it now) and prepare to observe. When the tape says "Observe," watch, always keeping the child in sight. If you can move inobstrusively closer to the interaction, do so.
3. You will observe for ten seconds. At the end of that interval, the tape will say "Code 1" (or 2-18). You will have three seconds to code, note prosocial behavior or affective language. At the end of that period of time, the tape will say "Observe" and you've begun the next interval. Code 18 intervals and move to next child. There is a 15 second lapse between children. Code behavior which is interrupted by the beginning of the interval.
4. When you first enter the setting, be sure not to respond to children if you have the timer in your ear. The timer is a discriminitive stimulus for the child indicating he should not interact with you. Their attempted interaction with you will soon extinguish. Please try to cover a child's name on the coding sheet if a child is hovering near you with curiosity.

5. The data sheet

a. More than one behavior per interval. Usually only one behavior will be checked for each 10 second interval. Occasionally, a prosocial or antisocial exchange will occur within the interval. In that case, code both give and receive, indicating which was first with an X. When a child is engaged in neutral exchange with peer and during interval performs a valent behavior, the valent behavior is coded and Entry/Neutral is not. When valent non-verbal behavior occurs with neutral verbal interaction, code both.

b. Time out or holding. Occasionally, the child you are observing is "consequated," with a "time-out" or a "sit-back". These are labels for the withdrawal of positive reinforcement of the group. The child is expected to stand or sit away and not interact with anyone for the period of time specified. When this happens, stop the observation tape with a PAUSE button and wait until the child comes out of the TO or holding. (Holding refers to the physical restraint by an adult.) If the child is not out after 2 minutes, restore coding tape to beginning of observation and go on to the next child. During the "time-out", note how the child takes the punishment. Does he talk to peers or staff? throw things? Resume observation at the end of the time out.

c. Prosocial behavior/affective language. When this occurs, write the symbol for the particular behavior opposite the interval number on the right side of the sheet. If there is time, note the specific. If the prosocial behavior is a response to a request from peer or staff, place a lower case "r" after tally

mark on data sheet.

Record affective language opposite interval number.

6. At the end of each day's observation, total each category; make sure all information is complete on the sheet and check off which one of twelve per child has been done.
7. Enjoy yourself??????????!!!!!!!

Behaviorial Code

Behavioral Category	Description

(1) Child Not Interacting + Child is not interacting; child is following expectations of the setting.

- standing in line waiting for a turn on a rope swing
- eating lunch
- playing with large tinker toys by himself
- wiping table or sweeping after lunch (place an H for helping at the interval and an *r at the tally mark in the category of child not interacting+)

  * This is a chore, thus it is a request of sorts.

(2) Child not Interacting - Child is off task; not attending, eyes wandering or fixated (day-dreaming), destroying property.

- child throws boots across room
- child sulks behind a tree, head down, not participating in an active PE game

(3) Gives + to Peer: verbal and nonverbal Gives approval, positive attention to peer; includes any spontaneous or requested incidents of prosocial behavior, verbal and nonverbal, i.e., helping, sharing comforting and cooperation.

- hugging another child, rubbing head of another child, almost all incidents of touching that are not obviously hits or threats to hit or shove e.g., the focal child is holding on the child in front of him and they are walking up the slide together
- smiles at peer, nodding
- "Go_____" to a peer in a game

Behavioral Category	Description
	- Helping - H - Child assists in a task which is better or more quickly done by more than one person.
	"Then I'll cut you one." (a paper hat)
	"Can I please help you?" (to staff)
	"Can I get you one?" (a popsicle for staff)
	Child walking behind another who is carrying a game, spontaneously bends to pick up puzzle piece the other child drops.
	Child hands rope to next child in line (r). (The child child care worker had established this expectation.)
	- Share - S - Child relinguishes an object which had been in the child's possession or use, or which was owned by the child.
	"Want a bite?" (food offered)
	Shares paper.
	- Comforting - Cm - Child offers comfort or condolence, or expresses concern about another's condition. Verbalizations may include words such as sorry, hurt, better, alright, OKAY etc.
	"Times sure are hard for _____."
	"Everyone is going to miss you" (to staff who is leaving)
	Physical demonstrations of comfort include extending a hand or arm toward the injured person and patting, stroking, or hugging - in a positive manner.
	- Cooperation - Cp - To code cooperation, the child must be obviously coordinating his behavior with another to accomplish a mutually desired goal.
	putting glue away, alternating placement of the glue bottles
	folding a blanket with a peer
	coordinating cutting one's own object from a piece of paper with another

Behavioral Category | Description

pushing a cart together

doing a puzzle together

active participating in a game outside with peers

board game where child is taking turns and is actively involved

(4) Gives - to Peer: verbal and nonverbal Child verbally or physically threatens, swears, derogates; child kicks or hits.

- focal child tattles "_____, Mike's kicking me!"
- child pokes peer in leg with scissors
- child "machine-guns" peers with hands during free time

(5) Receives + attention from peers. See 3.

(6) Receives - attention from peer. See 4.

(7) Entry or neutral behavior. In this category are verbal initiations with peer or staff; conversations which are not apparently positive or negative for the focal child, (e.g. whispering); listening to peer as denoted by eye contact, or leaning body and head toward peer. Merely watching a peer would not qualify as an interaction if the peer is not directing his attention to the focal child.

- "Can I have a lego?"
- "Do you like soccer?"

(8) Gives + to Staff: verbal and nonverbal.

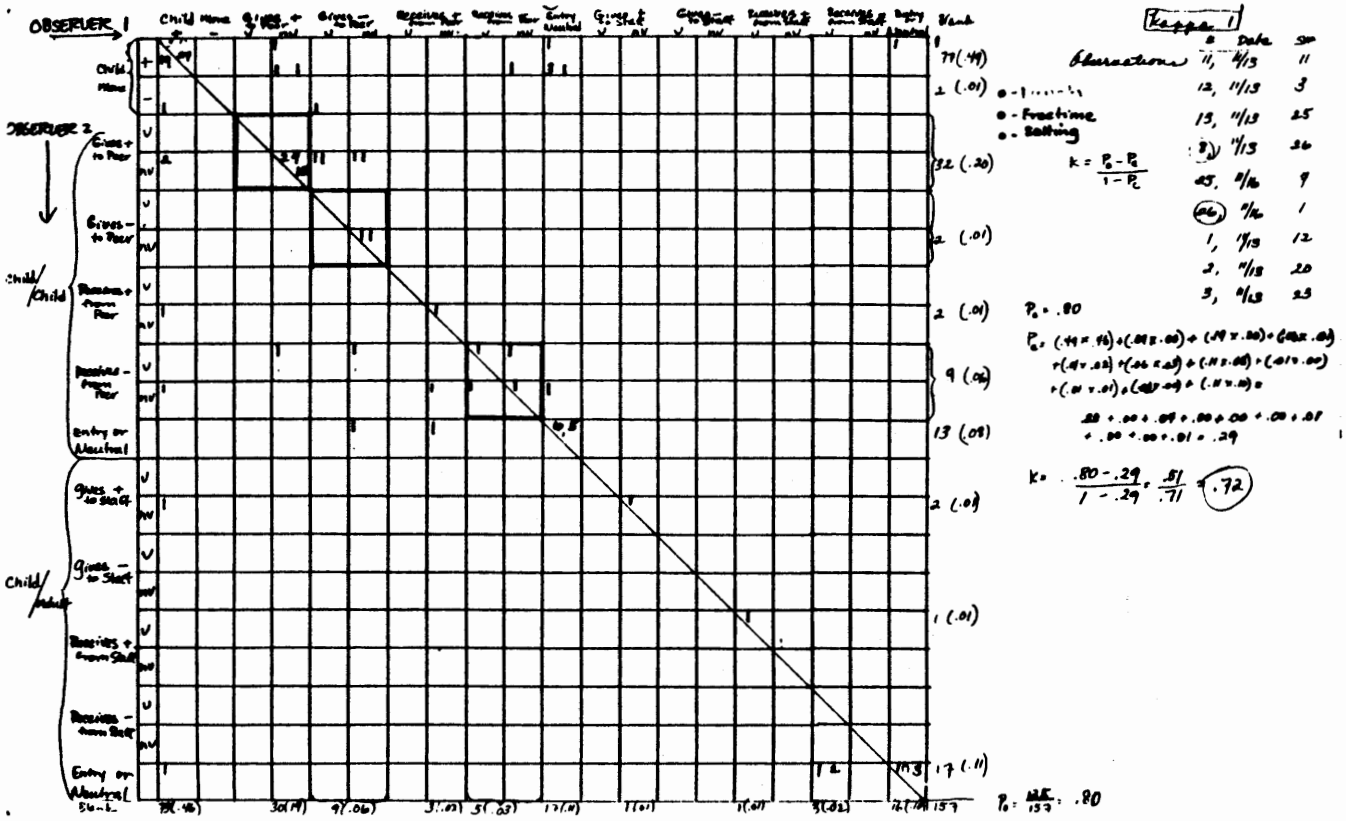
- Child positively reinforces adult "That's nice_____."
- "Debbie (staff) is a good drawer."
- Child comes up and puts arm around adult.

Behavioral Category	Description
(9)	Gives - to Staff: verbal and nonverbal.
	- "You stink _____."
	- "_____ is so ugly."
(10)	Receives + from Staff: verbal and nonverbal.
	- "You're doing a great job."
	- "You handled that well."
	- Hug, rubbing back or hair.
(11)	Receives - from Staff: verbal and nonverbal.
	- Time out given, threat
	- Holding
	- Verbally indicates the child has lost some points because of his behavior.
(12)	Neutral or entry behavior: child to adult and vice versa.
	- Staff gives information about behavior directly or through cross talk to another staff person.
	- Child asks for information. "When are we going bowling again?"
	- "Deb, I'm going to get treats."

APPENDIX D

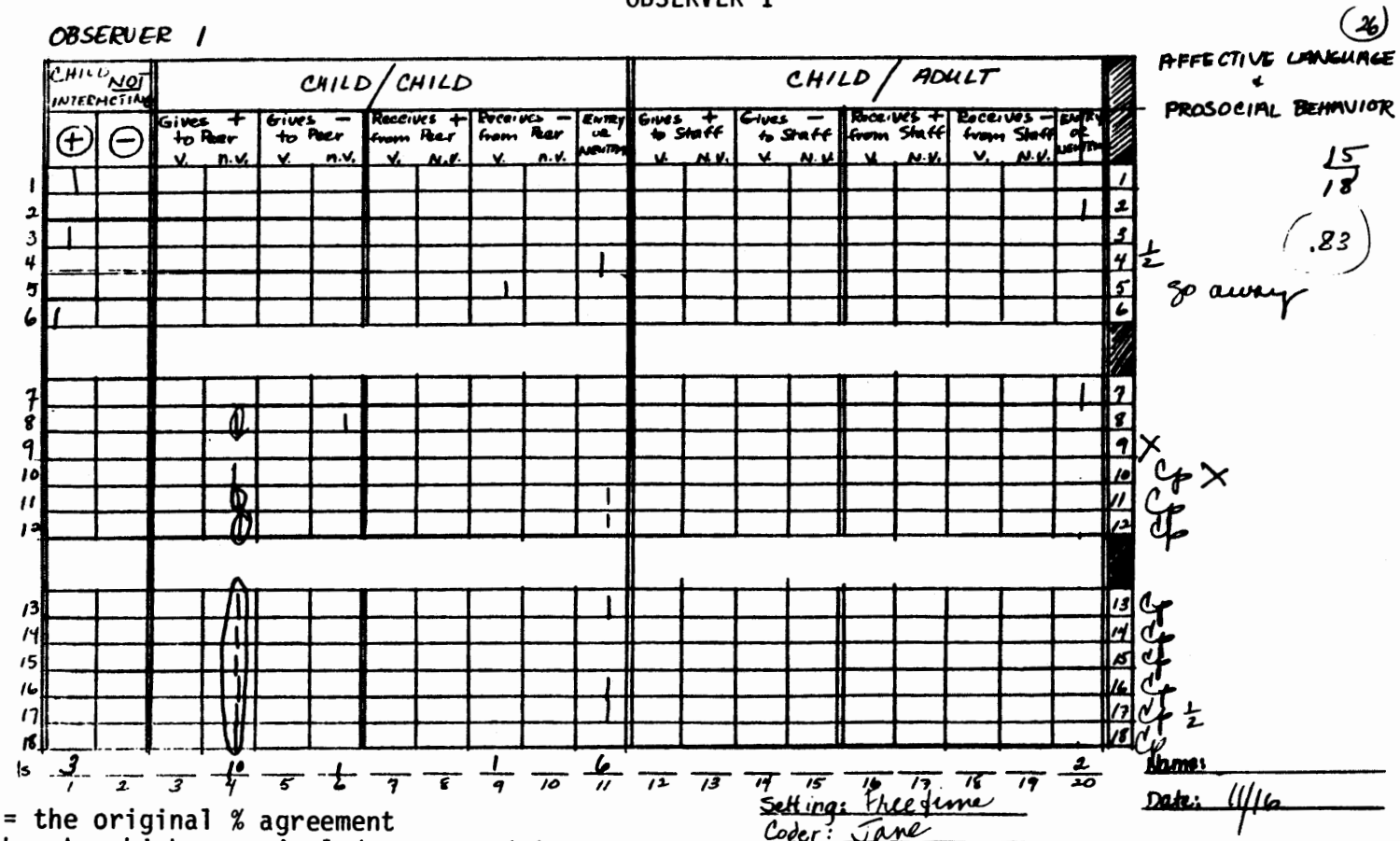
RELIABILITY OF OBSERVERS

EXAMPLE OF MATRIX AND COMPUTATION OF COHEN'S KAPPA (1)



EXAMPLE OF A JOINT OBSERVATION

OBSERVER 1



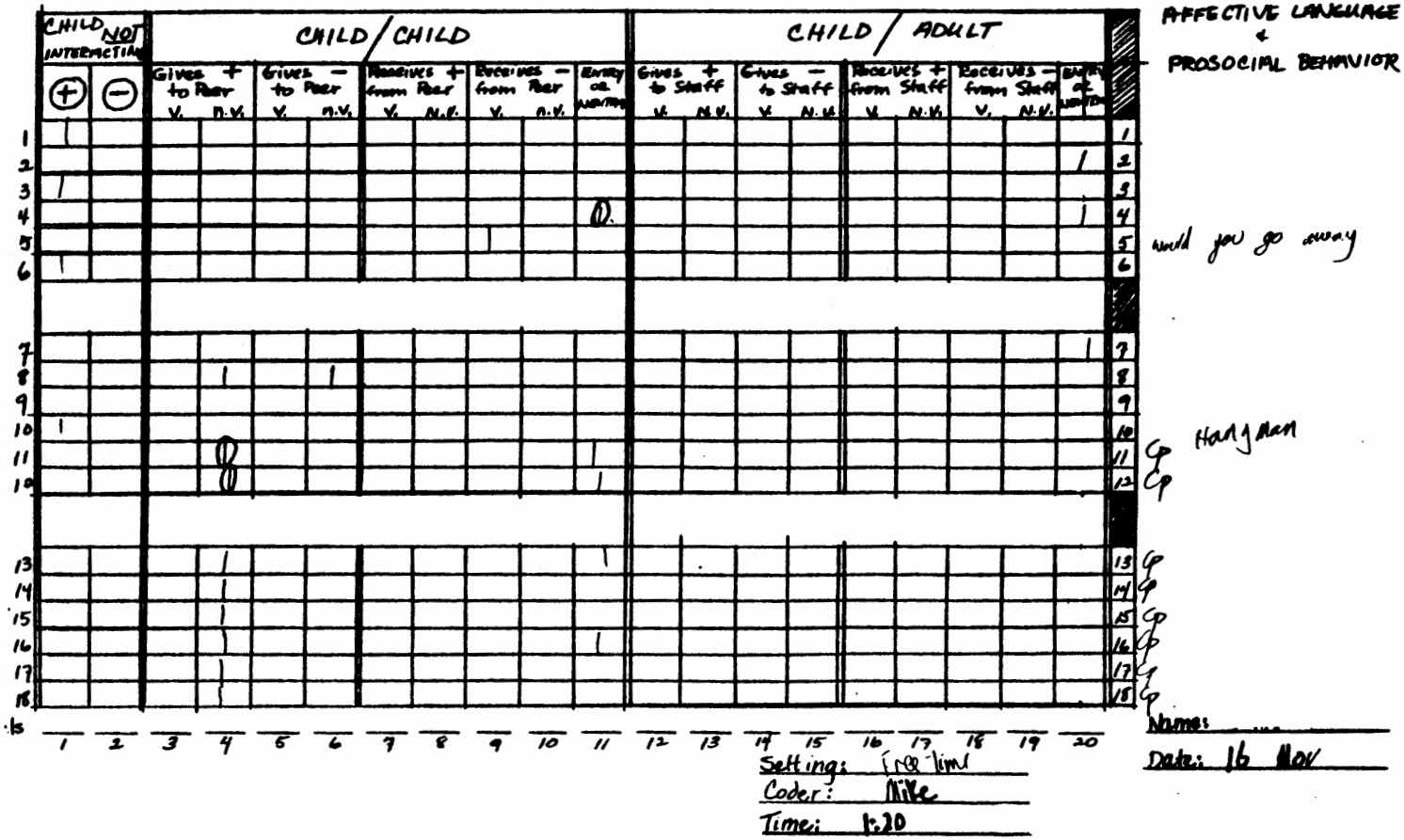
Notes:

a - .83 = the original % agreement

b - Hatchmarks which are circled were used in computation of the Cohen's kappa.

c - Cp = cooperation - children were playing game of hangman.

OBSERVER 2


CHILD NOT INTERACTING
CHILD / CHILD
CHILD / ADULT
Gives + to Peer V. N.V.
Gives − to Peer V. N.V.
Receives + from Peer V. N.V.
Receives − from Peer V. N.V.
Entry or Initiation
Gives + to Staff V. N.V.
Gives − to Staff V. N.V.
Receives + from Staff V. N.V.
Receives − from Staff V. N.V.
Entry or Initiation
AFFECTIVE LANGUAGE & PROSOCIAL BEHAVIOR
would you go away
Hangman
Setting: Free time
Coder: Mike
Time: 1:20
Name:
Date: 16 Nov

APPENDIX E

MEANS AND STANDARD DEVIATIONS FOR COGNITIVE MEASURES, ADJUSTED BEHAVIORAL CATEGORIES AND AFFECTIVE LANGUAGE

Cognitive Measures

	Selman[a]	Chandler[b]	PPVT	N of affective Words (Chandler)	Frequency of Affective Words (Chandler)
M	1.15	2.5	106.6	6.2	17.9
SD	.39	1.1	10.2	2.2	5.1

Adjusted Behavioral Categories

	ABC1	ABC2	ABC3	ABC4	ABC5	ABC6
M	94.5	4.2	27.9	11.4	3.1	5.9
SD	24.5	6.0	19.5	5.6	2.0	3.9

	ABC7	ABC8	ABC9	ABC10	ABC11	ABC12
M	41.9	3.9	1.2	6.6	2.1	29.8
SD	13.5	2.8	1.6	4.2	2.2	8.5

	Frequency of Observed Affective Language	AHelp	AShare	ACoop
M	1.2	3.0	.7	19.6
SD	2.0	3.1	.9	20.1

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[a] N = 25

[b] N = 26

APPENDIX F

INTERCORRELATION MATRIX OF ALL VARIABLES

This appendix contains an intercorrelation matrix of all variables. Because of page size constraints, the matrix has been divided into three sets. The first set contains the measures obtained during the cognitive testing session: Selman, Chandler, PPVT, Naffect (number or variety of affective words used during administration of the Chandler) and Faffect (frequency of affective word use during the Chandler.) The second set contains the twelve adjusted behavioral categories and the adjusted incidence of prosocial behavior. The third set contains the correlation of cognitive measures with the behavioral categories.

Each entry in the tables consists of three parts: (a) a correlation coefficient, (b) the number of cases (in parentheses), and (c) the significance level. Tests are two tailed.

Descriptions of the behavioral categories here labeled by their number (ABC 1 through ABC 12) will be found on page 23 and 24 of the text.

INTERRELATION MATRIX: COGNITIVE TESTS AND AGE

	AGE	SELMAN	CHANDLER	PPVT	NAFFECT	FAFFECT
AGE	1.0000	0.5203	0.3457	-0.0209	0.0738	-0.2756
	(0)	(25)	(26)	(26)	(26)	(26)
	P=*****	P=0.004	P=0.042	P=0.460	P=0.360	P=0.086
SELMAN		1.0000	0.2070	0.0858	0.1486	-0.0580
		(0)	(25)	(25)	(25)	(25)
		P=*****	P=0.160	P=0.342	P=0.239	P=0.391
CHANDLER			1.0000	0.0419	0.3671	-0.0877
			(0)	(26)	(26)	(26)
			P=*****	P=0.419	P=0.033	P=0.335
PPVT				1.0000	-0.0730	0.0413
				(0)	(26)	(26)
				P=*****	P=0.362	P=0.421
NAFFECT					1.0000	0.4309
					(0)	(26)
					P=*****	P=0.014
FAFFECT						1.0000
						(0)
						P=*****

INTERRCORRELATION MATRIX: ADJUSTED BEHAVIORAL CATEGORIES

	Alone on Task	Alone off Task	Gives + to Peer	Gives - to Peer	Receives + from Peer	Receives - from Peer	Entry/ Neutral	Gives + to Staff
	ABC1	ABC2	ABC3	ABC4	ABC5	ABC6	ABC7	ABC8
ABC1	1.0000 (0) P=******	-0.4177 (26) P=0.017	-0.5693 (26) P=0.001	-0.4005 (26) P=0.021	-0.0623 (26) P=0.381	0.0442 (26) P=0.415	-0.4617 (26) P=0.009	-0.3076 (26) P=0.063
ABC2		1.0000 (0) P=******	-0.1660 (26) P=0.209	0.3969 (26) P=0.022	0.0575 (26) P=0.390	-0.0912 (26) P=0.329	-0.0490 (26) P=0.406	-0.0165 (26) P=0.468
ABC3			1.0000 (0) P=******	0.1083 (26) P=0.299	-0.0514 (26) P=0.402	-0.0134 (26) P=0.474	0.1734 (26) P=0.198	0.1233 (26) P=0.274
ABC4				1.0000 (0) P=******	-0.0782 (26) P=0.352	0.3221 (26) P=0.054	0.0676 (26) P=0.371	-0.3482 (26) P=0.041
ABC5					1.0000 (0) P=******	-0.0749 (26) P=0.358	0.4353 (26) P=0.013	-0.0594 (26) P=0.387
ABC6						1.0000 (0) P=******	-0.1859 (26) P=0.182	-0.1345 (26) P=0.256
ABC7							1.0000 (0) P=******	0.0810 (26) P=0.347
ABC8								1.0000 (0) P=******

INTERCORRELATION MATRIX: ADJUSTED BEHAVIORAL CATEGORIES (cont.)

	Gives - to Staff ABC9	Receives + from Staff ABC10	Receives - from Staff ABC11	Entry/ Neutral ABC12	AHELP	ASHARE	ACOOP	AFFLNG
ABC9	1.0000 (0) P=*****	-0.1412 (26) P=0.246	0.5134 (26) P=0.004	0.1932 (26) P=0.172	-0.1872 (26) P=0.180	0.0665 (26) P=0.373	-0.2976 (26) P=0.070	0.0989 (26) P=0.315
ABC10		1.0000 (0) P=*****	0.1094 (26) P=0.297	0.0503 (26) P=0.404	-0.0077 (26) P=0.485	-0.1783 (26) P=0.192	-0.1107 (26) P=0.295	-0.1478 (26) P=0.236
ABC11			1.0000 (0) P=*****	-0.0984 (26) P=0.316	-0.2718 (26) P=0.090	0.0146 (26) P=0.472	-0.2369 (26) P=0.122	-0.3547 (26) P=0.038
ABC12				1.0000 (0) P=*****	0.0825 (26) P=0.344	-0.0638 (26) P=0.379	0.0320 (26) P=0.438	0.4175 (26) P=0.017
AHELP					1.0000 (0) P=*****	0.0159 (26) P=0.469	0.0515 (26) P=0.401	-0.0703 (26) P=0.366
ASHARE						1.0000 (0) P=*****	-0.1339 (26) P=0.257	0.2615 (26) P=0.098
ACOOP							1.0000 (0) P=*****	0.0131 (26) P=0.475
AFFLNG								1.0000 (0) P=*****

INTERCORRELATION MATRIX: ADJUSTED BEHAVIORAL CATEGORIES (cont.)

	Gives - to Staff	Receives + from Staff	Receives - from Staff	Entry/ Neutral				
	ABC9	ABC10	ABC11	ABC12	AHELP	ASHARE	ACOOP	AFFLNG
ABC1	-0.3495	0.3199	-0.2917	-0.3744	0.1312	0.0155	-0.4401	-0.1118
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.040	P=0.056	P=0.074	P=0.030	P=0.262	P=0.470	P=0.012	P=0.293
ABC2	0.3274	-0.0028	0.5319	0.0244	-0.2157	-0.0720	-0.1543	-0.1272
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.051	P=0.495	P=0.003	P=0.453	P=0.145	P=0.363	P=0.226	P=0.268
ABC3	-0.2585	-0.1481	-0.1617	0.0648	0.1662	-0.0542	0.8873	-0.0155
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.101	P=0.235	P=0.215	P=0.377	P=0.209	P=0.396	P=0.000	P=0.470
ABC4	0.3255	-0.2950	0.3445	-0.0919	-0.3438	0.2948	0.0480	-0.0581
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.052	P=0.072	P=0.042	P=0.328	P=0.043	P=0.072	P=0.408	P=0.389
ABC5	0.0548	0.2216	0.3993	-0.2424	-0.0739	0.1869	-0.0802	-0.0343
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.395	P=0.138	P=0.022	P=0.116	P=0.360	P=0.180	P=0.348	P=0.434
ABC6	-0.1851	-0.1488	-0.1698	-0.0657	-0.3482	-0.0619	0.0824	-0.2348
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.183	P=0.234	P=0.203	P=0.375	P=0.041	P=0.392	P=0.345	P=0.124
ABC7	0.3523	-0.4215	0.2044	-0.0405	0.1861	0.3371	-0.0229	0.2007
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.039	P=0.016	P=0.158	P=0.422	P=0.181	P=0.046	P=0.456	P=0.163
ABC8	-0.0248	-0.1281	-0.2450	0.5110	0.2496	-0.1032	0.2876	0.1789
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.452	P=0.266	P=0.114	P=0.004	P=0.109	P=0.308	P=0.077	P=0.191

INTERCORRELATION MATRIX: COGNITIVE TESTS AND AGE WITH ADJUSTED BEHAVIORAL CATEGORIES

	Alone on Task	Alone off Task	Gives + to Peer	Gives - to Peer	Receives + from Peer	Receives - from Peer	Entry/ Neutral	Gives + to Staff
	ABC1	ABC2	ABC3	ABC4	ABC5	ABC6	ABC7	ABC8
AGE	-0.3496	0.1002	0.3125	-0.1352	0.1494	-0.4590	0.3963	0.3023
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.040	P=0.313	P=0.060	P=0.255	P=0.233	P=0.009	P=0.023	P=0.067
SELMAN	0.1400	-0.0040	-0.0289	-0.0674	0.1187	-0.1483	0.2351	-0.0285
	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
	P=0.252	P=0.492	P=0.445	P=0.375	P=0.286	P=0.240	P=0.129	P=0.446
CHANDLER	-0.1504	0.1397	0.1067	0.0313	-0.0062	-0.0559	0.2691	0.1658
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.232	P=0.248	P=0.302	P=0.440	P=0.488	P=0.393	P=0.092	P=0.209
PPVT	-0.0355	0.0545	-0.0914	0.2474	0.1842	0.0706	0.2513	-0.3336
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.432	P=0.396	P=0.328	P=0.112	P=0.184	P=0.366	P=0.108	P=0.048
NAFFECT	-0.1514	0.0809	0.1251	0.2611	-0.3809	0.0247	-0.1253	0.0104
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.230	P=0.347	P=0.271	P=0.099	P=0.027	P=0.452	P=0.271	P=0.480
FAFFECT	0.3448	0.0264	-0.0585	-0.1284	-0.4049	-0.0434	-0.5060	-0.0772
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.042	P=0.449	P=0.388	P=0.266	P=0.020	P=0.417	P=0.004	P=0.354

INTERCORRELATION MATRIX: COGNITIVE TESTS AND AGE WITH ADJUSTED BEHAVIORAL CATEGORIES (cont.)

	Gives - to Staff	Receives + from Staff	Receives - from Staff	Entry/ Neutral				
	ABC9	ABC10	ABC11	ABC12	AHELP	ASHARE	ACOOP	AFFLNG
AGE	0.1157	-0.4351	0.0363	-0.0963	0.2849	-0.0301	0.2484	0.0186
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.287	P=0.013	P=0.430	P=0.320	P=0.079	P=0.442	P=0.111	P=0.464
SELMAN	0.0398	-0.3890	-0.2662	-0.2683	0.1898	0.4164	-0.0483	0.2356
	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
	P=0.425	P=0.027	P=0.099	P=0.097	P=0.182	P=0.019	P=0.409	P=0.128
CHANDLER	-0.0070	-0.3128	-0.2497	-0.0852	0.2731	0.0469	0.0848	0.1601
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.486	P=0.060	P=0.109	P=0.339	P=0.089	P=0.410	P=0.340	P=0.217
PPVT	0.0510	0.0041	0.1763	-0.1455	-0.0751	0.1696	-0.1981	-0.1330
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.402	P=0.492	P=0.194	P=0.239	P=0.358	P=0.204	P=0.166	P=0.259
NAFFECT	0.3322	-0.2026	-0.3178	0.1408	-0.1601	-0.1516	0.1787	0.3835
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.049	P=0.160	P=0.057	P=0.246	P=0.217	P=0.230	P=0.191	P=0.027
FAFFECT	-0.1543	0.3226	-0.3393	0.0101	-0.0582	-0.1027	0.1423	0.1225
	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
	P=0.226	P=0.054	P=0.045	P=0.480	P=0.389	P=0.309	P=0.244	P=0.276

APPENDIX G

MEANS AND STANDARD DEVIATIONS FOR ADJUSTED BEHAVIORAL CATEGORIES AND AFFECTIVE LANGUAGE SCORES FOR PERSPECTIVE-TAKING GROUPS

Observed Behavior	Groups		T-test
	Non Perspective-taking	Perspective-taking	
ABC1 (Non-interacting Positive)	102.5 (23.0)	83.0 (22.9)	2.08*
ABC2 (Non-interacting Negative)	2.9 (2.6)	5.9 (8.6)	-
ABC3 (Gives + to Peer)	24.0 (14.9)	33.1 (24.1)	-
ABC4 (Gives - to Peer)	11.3 (11.7)	4.3 7.2	-
ABC5 (Receives + from Peer)	2.9 (2.1)	3.3 (1.9)	-
ABC6 (Receives - from Peer)	6.3 (4.7)	5.4 (2.6)	-
ABC7 (Entry/Neutral with Peer)	37.0 (13.3)	48.0 (11.2)	2.33*
ABC8 (Gives + to Staff)	3.2 (2.2)	4.9 (3.2)	-
ABC9 (Gives - to Staff)	1.1 (1.5)	1.2 (1.8)	-
ABC10 (Receives + from Staff)	7.8 (5.0)	4.8 (1.9)	2.13*
ABC11 (Receives - from Staff)	2.6 (2.1)	1.5 (2.3)	-
ABC12 (Entry/Neutral with Staff)	29.8 (7.4)	29.7 (10.1)	-
Helping	2.3 (2.1)	4.1 (4.1)	-
Sharing	.5 (.8)	.8 (1.1)	-
Cooperating	16.4 (19.1)	23.9 (21.4)	-
Observed Affective Language	.9 (2.1)	1.6 (2.0)	-
N Affective Words (Chandler)	5.5 (1.6)	7.1 (2.6)	1.92*
Frequency of Affective Words	18.2 (5.8)	17.5 (4.2)	-

*$p < .05$