

SOCIAL SENSITIVITY IN YOUNG CHILDREN

by

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### ABSTRACT

Twenty third graders and twenty fifth graders were individually presented with five videotaped social situations in each of which an adult and a child each portrayed one of five standard emotions. Ss' multiple choice judgements of the emotions portrayed were reliable over one month and agreed with adult judgements as much as the adults agreed with each other. When asked to describe the videotaped scenes, however, children mentioned little emotional content. Accuracy of multiple choice judgements correlated  $+ .44$  with the amount of emotion described. It is maintained that previous findings that children have little social sensitivity are due to studies having used stimuli without full facial, verbal, vocal, body, and situational cues, and to their having measured only spontaneous naming of emotion. The research is interpreted within Flavell's model of interpersonal inference (1973).

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The present study deals with social sensitivity in young children. Social sensitivity is assumed to include the ability to notice as well as to recognize the emotions expressed by others. This chapter presents a review of the literature on adult judgment of emotion, followed by a review of the developmental research, and concludes with a statement of the specific research purposes.

### Theoretical Significance

It is common knowledge that emotions and the recognition of emotions are of crucial importance in countless aspects of individual experience and human affairs. Current ethological theory (Eibl-Eibesfeldt 1971, Jolly 1972) argue that the emotions or emotion-related phenomena played a significant role in the emergence of primate social life and primate intelligence. Clinical investigators (Spitz & Wolf 1946, Goldfarb 1955, Bowlby 1969) have asserted that, for the human infant, positive emotional interactions and attachments are crucial for sound mental, physical, and psychosocial development. Social sensitivity (SS), the ability to notice and to recognize the emotions expressed by others, has been viewed as a psychological variable of major importance for the process of socialization and the evolution of the self (Mead 1934, Sullivan 1940 and 1953, Ausubel et al 1952). Experimental studies have generally found SS to correlate positively with interpersonal competence (Dymond et al 1952, Bell & Hall 1954, Rothenberg 1970).

## Stimulus Cues Employed in Research

Typically, recognition studies have involved the presentation of a stimulus (an expression of an emotion) to a group of judges whose task it is to label the emotion being expressed. A review of the research in this area reveals a basic conflict between using simplified stimuli which lend themselves to exact physical specifications, and dealing with "realistic" stimuli of great complexity which cannot as yet be completely specified physically. It appears that there has been a premature restriction to the use of certain stimulus variables. An actual social situation typically includes a view of the total body of a social object, a view that is extended over a period of time, which is usually accompanied by sounds, and which is anchored in an observable social and physical setting. In contrast, the experimental studies have dealt with only a fraction of this total. There has been a lack of ecological validity (Brunswik 1947) in the research, despite the evidence to suggest that accuracy depends on such factors as the stimuli employed (e.g. live versus posed) and the emotion being expressed (Taguiri 1969). The artificial isolation of components in the total stimulus situation has occurred consistently in the experimental research; however, the method of simplifying the stimuli presented has varied from study to study.

### 1. Presentation of Facial Expressions in Still Photographs

The most common approach to simplifying stimuli has been to restrict the presentation to still photographs of facial expression only. This is done on the assumption that of all possible

stimulus aspects (face, gesture, body posture, voice), face is the most important aspect upon which judgments of emotional expression are actually made. This assumption is questionable. Most of these experiments have used photographs of a person (Darwin 1872, Ruckmick 1921, Feleky 1922, Allport 1924, Dunlop 1927, Landis 1929, Frois-Wittmann 1930, Jenness 1932, Munn 1940, Schlosberg 1954, Ekman 1969, Gitter et al 1971, Lo Castro 1972) or schematic drawings and models (Piderit 1886, Boring & Titchener 1923, Buzby 1924, Honkavaara 1961). The emotion being expressed is sometimes caught in its natural state, sometimes purposely produced in the laboratory, sometimes posed by a person, sometimes drawn by an artist, and sometimes produced by combining in certain ways interchangeable features of a human face. The results of these investigations have shown widely differing degrees of success which seem attributable to several factors: the photographs used, the nature of the discrimination demanded, the nature of the categories in terms of which emotional expressions were to be classified, the nature of the constraining information available to the judge, and the sampling of emotional expressions. However, enough success has been obtained to justify the assertion that part of the judgment in full social situations could be made on the basis of facial expression. Experiments which have sought to determine which part of the face contributes most to judgment have given disappointing results. The whole face has usually given the best results, and there seems to be no consistent superiority of one part over another. Frois-Wittmann (1930), Hanawalt (1942, 1944), and Coleman (1949) denied any consistent dominance, although there was some in individual pictures.

Buzby (1924) found the upper half of the face to be dominant; Ruckmick (1921) and Dunlap (1927) found the lower half more important.

## 2. Presentation of Facial Expressions Extended in Time

Several investigators (Dusenberry & Knower 1938, Coleman 1949, Cline 1964) have realized that a still photograph is only a poor representation of the facial expression seen in real life mainly because it is so constricted in time. Dusenberry and Knower (1938), using posed expressions, and Coleman (1949), using both posed expressions and spontaneous expressions, have demonstrated that there is considerably better agreement among judges viewing facial expressions from motion pictures than there is in the judgment of still photographs. Average amounts of improvement in agreement ranged from 30 to 50 percent. This improvement was obtained using stimuli restricted to presentation of head and shoulders for periods averaging ten seconds in duration.

## 3. Presentation of Vocal Cues

Another approach dealing with an isolated component of the total social situation is to study the emotional expressiveness of vocal cues, a record of a person's voice being the stimulus to be judged (Sherman 1927, Dusenberry & Knower 1939, Knower 1941 & 1945, Thompson & Bradway 1950, Davitz & Davitz 1959, Dimitrovsky 1964). Sound filters have been used to remove the content of speech while retaining the emotional qualities of the voice (Starkweather 1956, Soskin & Kauffman 1961), or, alternatively, the content has been held constant while varying the expression of the voice (Fairbanks & Pronovost 1939, Pollack et al 1960).

In general, such studies tend to uphold Soskin's view (1961) that the verbal aspects of speech (the content) carry predominantly semantic information while the vocal aspects (the "non-content" voice qualities) carry most of the affective information. Soskin & Kauffman (1961) found better agreement on judgment of "expressive meaning" among subjects judging filtered "content-free" speech than among subjects judging unfiltered speech. Starkweather (1956) found that in judging "aggressiveness" and "pleasantness", her subjects tended to pay more attention to the vocal (content-free) aspects of speech than to the verbal aspects. Davitz and Davitz (1964) reported a low but positive correlation between an individual's ability to recognize emotions utilizing verbal cues and the same ability utilizing vocal cues. In general, these investigations have demonstrated that emotional meaning as revealed in vocal ("non-content") expressions can be labelled with considerable accuracy. Davitz (1964) also reported that vocal cues plus facial cues were more effective in the communication of emotional meaning than facial cues alone; however, they were not any more effective than vocal cues alone.

#### 4. Presentation of Bodily Cues

Other investigators have chosen to study gesture, gait, or body posture as a basis for judgment. Tarcsay (1938) has made some preliminary observations on how anger, anxiety, cheerfulness, and sadness are portrayed by different ways of walking. Kline and Johannsen (1935) showed that judgments were more accurate when subjects were shown pictures including face, shoulders, arms, and hands than when the picture was restricted to the face.

Blake (1933) found that judgments of emotion were best when based on the whole body and face; next best based on the whole body without the face; then on the torso including the arms; then on feet, hips, and legs; and poorest from head-shoulder region, excluding the face. Wessell and Carmichael (1935) looked at portrayal of emotions through hand gestures alone. Accuracy of recognition was achieved; however, the subjects mentioned that they extrapolated to the inferred situation.

##### 5. Presentation of Contextual Cues

It seems possible to draw the general conclusion that part of the judgment in full social situations can be based on facial cues, vocal cues, and body cues. However, virtually all the evidence points to the fact that the more information there is about the situation in which the emotion is being expressed, the more accurate and reliable are judgments of the emotion (Fernberger 1928, Landis 1929, Jenness 1932, Munn 1940, Vinacke 1949, Goldberg 1951, Frijda 1958, Hunt et al 1958, Rump 1960, Schacter & Singer 1962, Cline 1964). A given emotional expression leads to a variety of interpretations; and the situational cues drastically codetermine and canalize the emotional interpretation (Frijda 1970). Fernberger (1928) concluded that "If a stimulus situation is indicated, the emotional state is judged in accordance with that situation rather than in accordance with the facial expression". Goldberg (1951) illustrated the importance of context by showing that judgments of emotion perceived in a movie scene were radically changed from "fear" to "joy" by the scenes that preceded the test scene. Real-life situations are complex, and

the contribution of cues from expression and situation takes place over time. Hebb (1946) has pointed out that an important cue for judging emotion is knowledge of the baseline state of expression being judged. Thus, cues intrinsic to the person object, the sequence, and situational information may all be used by the judge. In real life, the context may influence both the meaning of the expression for the judge, and the choice of expression itself on the part of the person who feels and expresses the emotion. It is still an open question just how the observer utilizes the information, and what weights he gives to each component, and whether he attends to the components rather than some higher-order variable derivable from their interaction (Tagiuri 1969).

Nevertheless, in general it does seem that recognition of emotions from a variety of expressions and cues is veridical.

#### Developmental Trends

Social sensitivity appears to constitute a developmental phenomenon. Observation of, attention to, and inference from social objects represent potential developmental goals, that is, they constitute cognitive dispositions and abilities which the child seems to lack wholly at birth and which therefore he must acquire or develop (Flavell 1971). Most studies on the recognition of emotion in the human infant have focused primarily on the face as a stimulus. Buhler and Hetzer (1928) reported evidence indicating that by at least the fifth to the seventh month infants can discriminate between a positive (smiling) face and a negative (angry) face, and between positive and negative



vocal expressions. Discriminating the significance of a threatening versus an affectionate motor gesture appears later, by about eight months. In contrast to these findings, Spitz and Wolf (1946) discovered that from about two to six months the presence of any human face in full frontal view evokes a smiling response, whether the presented face is smiling or threatening, but after six months, the infant is capable of discriminating different expressions. Ahrens (1954) obtained data with institutionalized children suggesting that at about five months perceptual discrimination of distinctive features of faces and facial expressions begins to occur. In the sixth and seventh months, his infants made clear differentiation between angry and smiling faces. With the little experimental evidence available on the recognition of emotion in infancy and the difficulty of accurate measurement, it is impossible to say whether infants are sensitive to facial expressions or if they require the total expressive behavior (facial, vocal, verbal, postural) of those around them before they can discriminate such behavior from other behaviors and recognize the emotional meaning. However, it does seem clear that during the middle of the first year of life the infant is probably discriminating between certain emotional expressions - facial cues accompanied by appropriate vocalizations and gross gestures (Charlesworth & Kreutzer 1973).

The European interpretation of the evidence demonstrating that the ability to discriminate between emotions is already present in infancy, is that SS is innate. In contrast, the American interpretation is that the recognition of emotion is learned - a view based primarily on the observed developmental trend in SS which

suggests that social experience and appropriate cognitive skills are necessary factors. The ability to recognize emotions has been shown to increase gradually with age (Gates 1923 & 1927, Honkavaara 1961, Dimitrovsky 1964, Rothenberg 1970). Gates' (1923) results indicated that adults could recognize six adult facial expressions - laughter, pain, anger, fear, surprise, scorn, from posed photographs with 84 to 100 percent accuracy. Her results with the children revealed a developmental trend. Fifty percent or more of the children below three years of age could recognize laughter, but not until five or six years of age were 50 percent of the children able to recognize pain. Anger was recognized accurately at seven years, fear at nine or ten years, and surprise at eleven years. Subsequently Gates (1927) confirmed this age increase in the recognition of emotion using a different medium - recordings of adults reading the alphabet in various emotional tones. Kellogg and Eagleson (1931) confirmed the finding that there is an increase in the ability to recognize adults' emotions with age. In more recent studies, Dimitrovsky (1964) and Blau (1964) made similar observations regarding sensitivity to vocal cues, and reported that there is a gradual and steadily progressive increase in this ability up to early adolescence. Honkavaara (1961) and Levy-Schoen (1964) also reported that social perception develops with age according to hierarchies of cue utilization, that is, the younger children paid more attention to certain cues which were not of the utmost importance to the older subjects. However, these hierarchies were by no means universal among the subjects and appeared greatly influenced by the situation and set under which the judgment was requested. Honkavaara also

demonstrated that young children were more accurate at labelling actions than at labelling expressions, but that this discrepancy decreases with age.

It appears that the thought of the young child is action-oriented. In the sphere of expressions, he first perceives the action-laughing or crying; not until later does he develop the ability to attach the appropriate interpretation - happy or sad, thus giving emotional significance to these behaviors. Flapan (1965) has demonstrated such a developmental trend with children from six to twelve years of age. With increase in age, there was an increase in the number of children who made interpretations and inferences regarding feelings, thoughts, and intentions. Development seemed to progress from reporting-describing to interpreting-inferring. It has been shown (Amen 1941, Dymond et al 1952, Gilbert 1969) that children become increasingly tuned to the thoughts and feelings of people in TAT-like cards, and attend less to the objective action and external detail. It appears that with age there is a general progression from emphasis on external variables (clothing, accessories, actions) to increased use of cues from facial expression in inference-making. It has been argued that these developmental trends are merely a function of increased ability to express more abstract thoughts; however, Burns and Cavey (1957) demonstrated that children under five years of age paid more attention to contextual cues than to contradictory facial expressions, with this trend reversing after five years of age. Moreover, studies employing nonverbal sorting tasks (Levy-Schoen 1961, Gilbert 1969, Savitsky & Izard 1970) have also reported similar age transitions from pairing stimuli on the basis of

accessories, sex, and age to pairing stimuli on the basis of emotional expressions.

The literature in this area clearly shows a developmental trend in the ability to recognize emotions expressed by others. SS is an ability that gradually increases with age. It should be kept in mind that the differences between the age groups may be the result of differential utilization of the stimulus material.

#### Affect Attention

One important but relatively neglected variable in the recognition of emotion is the tendency to selectively attend or not to attend to emotional meaning, that is, affect attention. Blau (1964) found that congenitally blind adolescents, compared with sighted adolescents, showed themselves to be more attentive to the affective underpinnings of dialogue; however, the blind subjects were inferior to the sighted subjects in accurately judging emotional content. This empirical evidence lends some support to Flavell's (1973) information-processing model of interpersonal inference. Flavell postulated that a general developmental account of social inference-making must include at least three separable components: (a) an existence component, (b) a need component, and (c) the inference component. The existence component refers primarily to the subject's basic knowledge that he or another person might possess any covert psychological process (i.e. emotions). The need component refers to the subject's awareness that the present situation calls for inferential activity about one or more of these

processes. The inference component refers to the actual interpretation of these processes. In his general review of person perception, Taft (1955) made a similar distinction, listing three main attributes of the ability to judge others: (a) possession of appropriate judgmental norms, (b) motivation, and (c) judging ability. It is reasonable to believe that these components represent fundamental and probably closely interrelated outcomes of social-cognitive development, and also that the age at which they emerge could vary a great deal as a function of the particular characteristic being inferred. Piaget (1926 & 1928) had concluded that children of preschool and even elementary school age do not spontaneously reflect about either their own or other persons' psychological processes (a need problem), and are not very skillful at it when induced to try (an inference problem). Therefore, it would appear that any developmental study dealing with the recognition of emotion should attempt to separate veridicality in judgment from affect attention, the tendency to attend or not to attend to emotional meaning.

### The Present Study

The present study was designed to develop for children a measure of SS that made needed improvements over some of the previous attempts. Examination of the previous research reveals that the reported deficiencies in the ability to recognize emotions may be due to: (a) the artificial stimulus material used (e.g. still facial photographs), and (b) the methodology employed, in which children were typically given credit only if they spontaneously

mentioned the correct emotional terms. The present study investigated children's SS when: (a) the stimulus situations had ecological validity for the subjects, (b) the stimulus material closely approximated realistic social situations, with facial, verbal, vocal, body, and situational cues simultaneously present, and (c) the subjects, as well as spontaneously describing the stimulus situations, answered with either a verbal or behavioral response specific questions regarding the emotion portrayed. Thus, it was possible to separate accuracy of judgment from the tendency to notice feelings, regardless of accuracy. The relationship between these two variables was investigated, as well as their relationship to the variables of the stimulus persons (age and sex), and to the variables of the judges (age and sex).

## Method

### Stimulus Material

In order to determine the stimulus material which would have ecological validity for the children to be tested, 39 elementary school children from Aubrey Elementary School in Burnaby, British Columbia were questioned. Twenty-one children from Grade Three, with ages ranging from 7 years to 8 years with a mean age of 7.8 years, and 18 children from Grade Five, with ages ranging from 9 years to 11 years with a mean age of 9.8 years, were interviewed individually to determine what situations evoked specific emotions in them. Five major emotions were chosen: happiness, anger, fear, surprise, and sadness. Simply labelled categories of emotional meaning were employed to minimize the effects of increasing verbal ability with age. Previous developmental

studies have employed similar categories of emotional expression (Dimitrovsky 1964, Borke & Su 1972). Moreover, the chosen emotional categories correspond to the list of primary human affects delineated by Tomkins (1962). Since it has been indicated (Dimitrovsky 1964) that children may respond differentially to positive and negative emotions, both categories were included to allow a comparison. Happiness and surprise comprised the positive category; anger, fear, and sadness comprised the negative category. Each child was asked: "When was the last time you were happy (angry, scared, surprised, sad)?", and was required to respond to all five emotional categories. A frequency distribution of the types of responses given is presented in Appendix A. The most commonly occurring responses were used as a basis to construct videotape recordings.

Previous research (Rothenberg 1970) indicates that sound motion pictures may be the ideal stimulus material to measure adequately social sensitivity in children. It was decided that the stimulus material would be presented in a series of short episodes, and that each episode would attempt to portray a realistic social interaction between one adult and one child. Four experienced actors were used: two adults, one male and one female, and two children, one eight year old male and one eleven year old female. Previous developmental studies have relied almost exclusively on the presentation of adult emotional expression (Gates 1923) or adult-adult interactions (Rothenberg 1970). The presentation of adult-child interactions in the present study was an attempt to provide the maximal conditions for accurate recognition of emotional expression by the children, and to provide a measure of the

children's possible differential sensitivity to the emotional expression of the adult versus that of the child. In addition, each adult actor was paired with the child of the same sex as well as with the child of the opposite sex in order to eliminate a possible bias resulting from a favoring of a particular sex-pairing. The actors enacted situations based on the most commonly occurring responses of the school children. Twenty-seven film episodes, ranging in duration from 20 to 30 seconds, were edited from the footage. Each of the five emotions was portrayed two or more times by both an adult and a child (see Appendix B).

Following a suggestion (Taguiri & Petrullo 1958) that a profitable line of attack in person perception would be to obtain a definition of the stimulus from a consensus of judges, the edited film episodes were presented to 270 students in order to determine the identifiability of the portrayed emotions. The Ss were students at Simon Fraser University in Burnaby, British Columbia who were taking either one of two 100-level psychology courses - Introductory Psychology or The Psychology of Social Issues. Their ages ranged from 16 years to 39 years with a mean age of 20.6 years. Prior to the validation test, one group of ten students from each course was pretested with five film episodes, which depicted all five child emotions chosen randomly within the emotional categories. The pretest was carried out to determine whether there were any systematic differences between the two populations. A maximum likelihood chi square analysis was performed on the responses of the two groups, and no significant differences were found (Table 1). Thus, the students from the two courses were treated as comparable for the purposes of this investigation.



TABLE 1

Maximum Likelihood Chi Square Analysis of the Responses of  
Samples of the Two Psychology Courses Used in the Validation  
Test

<u>FILM EPISODE</u>	<u>STIMULUS PERSON</u>	<u>CHI SQUARE (<math>\chi^2</math>)</u>	<u>LEVEL OF SIGNIFICANCE*</u> (n = 10, df=6)
#1	Adult	5.545	n.s.
	Child	2.995	n.s.
#2	Adult	.000	n.s.
	Child	1.588	n.s.
#3	Adult	2.773	n.s.
	Child	6.998	n.s.
#4	Adult	.840	n.s.
	Child	3.452	n.s.
#5	Adult	4.777	n.s.
	Child	.220	n.s.

\* critical value of chi square for .05 level of significance = 12.59  
critical value of chi square for .10 level of significance = 10.64  
critical value of chi square for .20 level of significance = 8.56

The 270 students viewed the edited film episodes in groups of ten. Each group was presented with only one episode in order to avoid either order or set effects. A sample film was viewed first, followed by the film episode to be judged. The students were required to describe what happened in the film, then to specify what emotions had been expressed, and finally to choose the most appropriate emotion words from a list of emotions provided. The film episode was viewed once more, and additional comments recorded if desired. The format of the questionnaire used is presented in Appendix C, and the specific instructions given are presented in Appendix D.

Analyses of the responses showed that in 19 out of the 27 film episodes at least 80% of the students within a group agreed on the adult and/or child emotion portrayed (Table 2). The only emotional expression on which there was no agreement was an adult portrayal of fear. There were eight film episodes in which there was at least 80% agreement on both the adult and the child emotion. Every stimulus person was judged to have portrayed efficiently an emotion in four to nine film episodes, and to have successfully expressed at least three or four emotional categories.

Only those film episodes with at least 80% agreement among the university students on both the adult-portrayed and the child-portrayed emotion were considered for use with the elementary school children. Final selection of the film episodes insured that all five emotional categories were portrayed by a child, and four emotions were portrayed by an adult (there was no significant agreement on an adult portrayal of fear). Care was also taken to insure that each sex-pairing occurred at least once. The film

TABLE 2

Films with at least 80% Agreement on Adult and/or Child Emotion

<u>FILM EPISODE</u>	<u>CHILD EMOTION</u>	<u>% AGREEMENT</u>	<u>ADULT EMOTION</u>	<u>% AGREEMENT</u>
#1	scared	90	surprised	80
#4			angry	90
#5			happy	90
#6	scared	100		
#7	scared	100	happy	80
#9			happy	100
#14			angry	80
#15	happy	80	happy	100
#16	surprised	90	happy	100
#17	sad	90	sad	90
#18	scared	100		
#21	angry	100		
#22	happy	80		
#24			sad	100
#26	angry	90	angry	80
#27	angry	80	angry	100
#28			happy	90
#29	sad	100	sad	80
#30	happy	90		

episodes chosen for use are presented in Table 3. Examination of Appendix A and Table 3 indicates that the situations represented in the final film episodes demonstrate ecological validity for Burnaby elementary school children.

### Subjects

Forty elementary school children from Duthie Union School in Burnaby, British Columbia were tested. Twenty children were chosen from Grade 3, with ages ranging from 7 years to 9 years with a mean age of 8.2 years, and twenty children from Grade 5, with ages ranging from 10 years to 12 years with a mean age of 10.5 years. There were ten males and ten females from each grade level chosen by the teachers to represent the range of intellectual ability within the grades.

### Procedure

Each of the 40 elementary school children were interviewed individually, and his responses taperecorded. The child was brought into a room in which there was a television monitor and a taperecorder, and was instructed that he was about to watch a few short movies about which he would be questioned. A sample film was viewed first, followed by the five film episodes to be judged. After each test film, the child was asked to describe what happened. All five film episodes were then viewed again. The child was asked after each film to specify how both the adult and the child were feeling, and then to choose one item out of five possible emotional categories (happy, angry, scared, surprised, sad) which best described the child emotion, and one item to best describe the adult emotion. The specific instructions given are presented in Appendix E. To aid the child in his decision, a card

TABLE 3

## Selected Film Episodes

<u>FILM EPISODE</u>	<u>TIME</u> (in seconds)	<u>CHILD</u> <u>EMOTION</u>	<u>ADULT</u> <u>EMOTION</u>
#1 A little boy comes running into the living room to his mother, screaming that he had been bitten by a spider when he was in bed.	30	scared 90%	surprised 80%
#15 A little girl, returning home from school, is told by her mother that her old ballet teacher is back in town and wants her to take classes with her again.	20	happy 80%	happy 100%
#16 A father tells his son that he has unexpectedly acquired two tickets to the hockey game that evening, and that the boy can come if he finishes his homework.	30	surprised 90%	happy 90%
#26 A father is yelling at his daughter for fighting with her brother and disturbing his work. The little girl yells back claiming that it was not her fault but her brother's. Nevertheless, the father sends her to her room.	28	angry 90%	angry 90%
#29 A father and his daughter return home after having put their dog to sleep. The father tells her how sorry he is, but how it just had to be done.	28	sad 100%	sad 80%

was presented with a schematic drawing of the appropriate facial expression above each emotion word (Appendix F).

There were five different orders of presentation of the film episodes, insuring that each film was viewed in each position. Four children (two children within each grade-sex combination received each order to counterbalance any possible order effects.

Half of the sample ( $n = 20$ ) were retested one month later with the same procedure. On this occasion, one child within each grade-sex combination received each order of presentation of the film episodes to again counterbalance any possible order effects.

Each S was rated by his teachers on six teacher rating scales: (a) social sensitivity, (b) facial expressiveness, (c) noticing stimuli, (d) friendliness, (e) activity level, and (f) sociability. Each scale contained five points, with a score of three indicating average status on the dimension being rated, and scores of one and five representing above average and below average statuses respectively. A description of the six rating scales given to the teachers is presented in Appendix G.

### Scoring

The 40 Ss were scored on two variables: (1) the accuracy measure (ACC), and (2) the affect attention measure (AA).

#### 1. The Accuracy Measure

The ACC score was calculated from the Ss' responses to the multiple choice questions. Each S answered two multiple choice questions for each film episode, one referring to the child's emotion and one referring to the adult's emotion. Therefore,

in each testing situation, each S made ten multiple choice responses. A response was given a score of one if it was the same response as the adult standard response as determined by the validation test. A response was given a score of zero if it differed from the adult standard response. Therefore, each S received an ACC score out of ten, determined by summing the response scores over the five film episodes. An ACC score of zero then indicates complete disagreement with the adult standard responses, while an ACC score of ten indicates complete agreement with the adult standard responses.

## 2. The Affect Attention Measure

The AA score was calculated from the open-ended question requiring the S to describe what happened in the film. The tape-recorded responses to this question were transcribed into type-written format to facilitate scoring. Instructions for the scoring were devised by the author. Three scoring categories were used: (a) strict, (b) medium, and (c) liberal. The strict category included the use of the name of an emotion, the description of a physical action denoting an emotion, and the use of the word "feel" along with an emotionally-evaluative word. The medium category included the use of any other noun or verb that necessarily denotes emotion (i.e. fight, nightmare, complains). The liberal category included any case in which the reference to the emotion was stated as a direct repetition or paraphrase of the words of the film. One point was given for each item within a category.

A S's AA score was calculated by summing his score within each category over the five film episodes. Thus, the lowest

possible AA score would be zero, indicating no mention of emotional content. There was no upper ceiling on the AA score. A total AA score was calculated by summing over the three scoring categories. An independent rater also scored the responses using the written instructions as a guideline (see Appendix H).

## Results

The results are divided into two sections: the first section deals with the accuracy measure (ACC), the measure of the accuracy of the emotional recognition; and the second section deals with the affect attention measure (AA), the measure of the tendency to selectively attend or not attend to emotional meaning.

### 1. Accuracy (ACC)

Test-retest reliability was first examined to determine whether the children's responses to the films were stable over the one month interval between the test and the retest. For the 20 children (ten from Grade 3 and ten from Grade 5) who were interviewed in both testing situations, the mean test score was 8.6 (8.3 for Grade 3 and 8.8 for Grade 5) and the mean retest score was 8.6 (8.4 for Grade 3 and 8.8 for Grade 5). The obtained  $t$  value (.37) demonstrates that there was no significant difference between the two testing situations, indicating that the children received approximately the same accuracy scores on both the test and the retest (Appendix I). An alternative way of looking at test-retest reliability is to examine whether the children made the same responses in both testing situations regardless of the



accuracy of those responses. Each S's percentage of agreement with himself over the two testing situations was calculated. A test response was considered to be in agreement with the corresponding retest response if the same choice of the five possible emotional categories was made on both occasions. The mean percentage of agreement for all Ss tested in both situations ( $n = 20$ ) was 86% with a range from 60% to 100%. Individual z scores were calculated to test the significance of these percentages. All obtained z scores were significant at the .05 level (Appendix J) demonstrating that all of the children made the same responses in both testing situations significantly more often than would be expected by chance. Looked at either way the results indicate that the ACC measure does have stability over time. Therefore, in all further analysis of the ACC measure only the test responses were used.

Do children accurately recognize emotions as judged against the adult standard of accuracy? Every child made ten responses, each response requiring him to choose one item out of five possible emotional categories. A response that was identical to the adult standard was given a score of one; while any response that differed from the adult standard response was given a score of zero. The Ss' scores ranged in value from four to ten, with a score of ten indicating complete accuracy. For the total sample tested ( $N = 40$ ), the mean percent agreement with the adult standard was 83% (Table 4). It appears that the children did accurately recognize the emotions portrayed.

TABLE 4

Mean Percentage of Agreement with the  
Adult Standard in Total Sample

	<u>Sample Size</u>	<u>Mean Percentage Agreement</u>
Grade 3 males	10	82
Grade 3 females	10	80
Grade 5 males	10	87
Grade 5 females	10	83
Total sample	40	83

An analysis of variance was carried out to determine what variables contributed significantly to the variance in the ACC score. The results are presented in Table 5. Inspection of Table 5 indicates that the only variables that contributed significantly to the variance in the ACC score were: (a) the emotion portrayed, and (b) whether the expressor was an adult or a child. However, it should be kept in mind that there was very little variance in the ACC scores, and hence only very obvious effects would be tapped. Appendix K presents the ACC scores for the total sample.

The results of the analysis of variance (Table 5) show that neither grade nor sex contributed significantly to the variance in the ACC score. The mean ACC scores were 8.2 for Grade 3 males, 8.0 for Grade 3 females, 8.7 for Grade 5 males, and 8.3 for Grade 5 females.

The results of the analysis of variance (Table 5) indi-

TABLE 5

## Analysis of Variance of ACC Scores

<u>Source of Variance</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Grade (G)	1	.2025	.2025	1.6418
Sex (S)	1	.1225	.1225	.9768
Teacher Rating Scales (TRS)	6	1.4594	.2432	1.9394
Film Order (FO)	4	.9900	.2475	1.9737
Emotion (E)	4	2.6108	.6527	5.2049
Adult/Child Expressor (A/C)	1	2.1551	2.1551	17.1858*
Male/Female Expressor (M/F)	1	1.0845	.0845	.6738*
G x S	1	.0010	.0010	.0072
G x FO	4	.4124	.1031	.8221
G x E	4	.9407	.2352	1.8756
G x A/C	1	.2191	.2191	1.7472
G x M/F	1	.3451	.3451	2.7529
S x FO	4	.3595	.0899	.7169
S x E	4	.0817	.0204	.1626
S x A/C	1	.0108	.0108	.0861
S x M/F	1	.0353	.0353	.2815

\* p &lt; .01

cate that the teacher rating scales (TRS) were not useful in predicting the ACC score. Table 6 presents the intercorrelations among the TRS and the ACC measure. Accuracy did not correlate highly with any of the rating scales. (The raw data are presented in Appendix L.)

TABLE 6

## Intercorrelations Among the Teacher Rating Scales

	<u>TRS #1</u>	<u>TRS #2</u>	<u>TRS #3</u>	<u>TRS #4</u>	<u>TRS #5</u>	<u>TRS #6</u>	<u>ACC</u>
TRS #1	-						
TRS #2	.19	-					
TRS #3	.54*	.43*	-				
TRS #4	.17	.42*	.14	-			
TRS #5	-.07	.38	.13	.45*	-		
TRS #6	.56*	.23	.38	.06	-.09	-	
ACC	.08	.26	.32	.14	-.09	.15	-

\*  $p < .01$

The results of the analysis of variance (Table 5) show that the order of presentation of the film episodes did not contribute significantly to the variance in the ACC score.

The specific emotion portrayed contributed significantly (.01) to the variance in the ACC score (Table 5). The proportion of correct responses are given in the diagonal entries of Table 7, and the comparison with the adult standard is given in Table 8. A Scheffe' test was done to test the a priori comparison between

TABLE 7

Percentage of Responses to Each Expressed Emotion Falling into Each Response Category.

<u>Expressed Emotion</u>	<u>Response Category</u>				
	<u>Happy</u>	<u>Angry</u>	<u>Scared</u>	<u>Surprised</u>	<u>Sad</u>
Happy	.83	.00	.00	.17	.00
Angry	.00	.79	.05	.01	.15
Scared	.00	.00	.90	.02	.08
Surprised	.19	.00	.04	.71	.06
Sad	.01	.01	.03	.00	.95

TABLE 8

Percentage of Accurate Responses to Adult-portrayed and Child-portrayed Emotions by Child Judges and Adult Judges.

<u>Expressed Emotion</u>	<u>Adult-portrayed Emotion</u>		<u>Child-portrayed Emotion</u>	
	<u>Child Judges</u>	<u>Adult Standard</u>	<u>Child Judges</u>	<u>Adult Standard</u>
Happy	.91*	.95*	.70	.80
Angry	1.00	.80	.58	.90
Scared	-	-	.90	.90
Surprised	.75	.80	.68	.90
Sad	.90	.80	1.00	1.00

\* averaged over two film episodes, whereas all others represent one film episode.

the positive emotions portrayed ("happy" and "surprised") and the negative emotions portrayed ("angry", "scared", and "sad"). The  $F (.475)$  was not significant, demonstrating in this study there were no significant differences in the children's ability to recognize positive emotions and negative emotions. The Newman-Keuls procedure was used to make the a posteriori comparisons between the emotional categories. The only comparison with significant results (.05) was the comparison between "sad" and "surprised", indicating that the children's responses were more accurate when "sad" was portrayed than when "surprised" was portrayed, and that there were no significant differences between any of the other comparisons. It can be concluded that in this study the children's accuracy in recognizing emotions varied with the specific emotion portrayed. Inspection of Table 7 reveals the specific confusions between the emotional categories.

The results of the analysis of variance (Table 5) also show that the age of the emotional expressor (A/C) contributed significantly (.01) to the variance in the ACC scores. The mean ACC score for the five adult-portrayed emotions was 4.48, whereas the mean ACC score for the five child-portrayed emotions was 3.83. The children were significantly more accurate when judging the emotions portrayed by the adults than when judging the emotions portrayed by the children ( $t = 4.41, p < .001$ ).

The results of the analysis of variance (Table 5) reveal that the sex of the emotional expressor (M/F) did not contribute significantly to the variance in the ACC scores. The mean ACC score for the five male-portrayed emotions was 4.35, and the mean ACC score for the female-portrayed emotions was 3.95. It

can be concluded that in this study there was no significant difference in the children's ability to recognize male-portrayed and female-portrayed emotions.

## 2. Affect Attention (AA)

Interrater reliability was first examined to determine if there was consistency between the two raters (Rater 1 is the author, Rater 2 is the independent rater). Rater 1 gave AA scores that totalled to 203 over all Ss ( $N = 40$ ) and all categories ( $N = 6$ : strict test, medium test, liberal test, strict retest, medium retest, liberal retest); and Rater 2 gave AA scores that totalled to 208 (Appendix M). In all of the 411 judgments, there were only 13 disagreements. In each of these, one of the raters gave either one more or one less score to any particular S. The percentage of agreement was 97%. Correlation coefficients between the two raters were calculated within the scoring categories. The results presented in Table 9 reveal significant correlations (.01) for all the scoring categories, indicating enough similarity in the AA scores given by the two raters to justify using simply the scores given by the author in further analysis of the AA measure.

Test-retest reliability was then calculated to determine whether the children's AA scores were stable over the one month interval between the test and the retest situations. Table 10 presents the correlation coefficients between the two testing situations for the subset of the sample that received both the test and the retest ( $n = 19$ , the responses of one Grade 5 male were lost). The results indicate that the strict category was

TABLE 9

## Correlations Between the Two Raters

<u>Category</u>	<u>N</u>	<u>Correlation Coefficient</u>
Test: Strict	40	.99*
Medium	40	.98*
Liberal	40	.98*
Total	40	1.00*
Retest: Strict	19	1.00*
Medium	19	.97*
Liberal	19	.93*
Total	19	.99*

\* p &lt; .01

TABLE 10

## Correlation Between Test Scores and Retest Scores (n=19)

<u>Category</u>	<u>Correlation Coefficient</u>
Strict	.60*
Medium	.26
Liberal	.39
Total	.53**

\* p &lt; .01

\*\* p &lt; .05



the only AA measure that was reliable over the one month interval, the medium and liberal categories varied over the interval between the test and the retest. In order to determine the relationships among the AA scoring categories, intercorrelations were calculated for the test scores. The results presented in Table 11, reveal no significant relationship among the individual AA scoring categories. The total AA scores correlated significantly (.01) with all three category scores since the AA total score is simply the composite of the strict, medium, and liberal scores; however, the strict scores correlated the best with the total score. Because the strict category was the only measure reliable over time, and because it was not significantly correlated with the other two scoring categories, all further analysis was restricted to the strict test scores.

TABLE 11

## Intercorrelations Among the AA Scoring Categories

	<u>Strict</u>	<u>Medium</u>	<u>Liberal</u>	<u>Total</u>
Strict	-			
Medium	.19	-		
Liberal	.30	.02	-	
Total	.82*	.50*	.66*	-

\*  $p < .01$

A chi-square analysis was carried out to determine whether there was any difference between the two grade levels in their tendency to selectively attend or not attend to emotional

meaning. The children were divided into two groups on the basis of their AA scores: those who mentioned emotional content ( $AA > 0$ ,  $n = 21$ ), and those who never mentioned emotional content ( $AA = 0$ ,  $n = 19$ ). The resulting chi-square value (2.5) was not significant.

A chi-square analysis was also carried out to determine whether the AA scores varied between the sexes. The resulting chi-square value (.90) was not significant, indicating that in the present study there was no difference between males and females in their affect attention.

In order to determine if the teacher rating scales were related to the AA measure, correlations were calculated. All the correlation coefficients were not significant, ranging in value from  $-.004$  to  $-.4$ . It can be concluded that in the present study the teacher rating scales were not useful in predicting the AA scores.

The relationship between the ACC measure and the AA measure was investigated. Because it was suspected that the AA score might have been influenced by the number of words spoken, that is the S's verbosity, this measure was also included. The correlation coefficients among these measures are presented in Table 12. There is a significant (.01) positive correlation between the ACC measure and the AA measure; however, the AA measure was also significantly (.05) correlated with the verbosity measure. Therefore, a partial correlation between ACC and AA holding verbosity constant was calculated to ascertain whether the significant relationship between ACC and AA would still be present. The partial correlation coefficient of .44 was significant (.01), demonstrating a significant positive relationship

between ACC and AA independent of verbosity. It can be concluded that in the present study the children who were more accurate in emotional recognition tended also to display more affect attention, that is, tended to mention emotional content more often.

TABLE 12

Intercorrelations Among the ACC Measure,  
the AA Measure, and Verbosity.

	<u>ACC</u>	<u>AA</u>	<u>Verbosity</u>
ACC	-		
AA	.50*	-	
Verbosity	.28	.35**	-

\* p < .01

\*\* p < .05

## Discussion

The results indicate that in this study Grade 3 and Grade 5 children accurately and reliably recognized emotions. Analysis of variance indicated that the degree of accuracy was dependent upon the specific emotion portrayed and on whether the actor was an adult or a child; however, these results have to be interpreted with some caution since the very high level of accuracy obtained resulted in a restriction in the range of scores. Despite the high level of accuracy, the Ss did not spontaneously mention much emotion. The affect attention measure was reliable and correlated significantly with the accuracy measure. There was no evidence that grade or sex influenced either measure.

In previous research, school age children did not accurately recognize emotions. The discrepancy between the results of this study and the results of earlier studies may have been due to one or any combination of the following: (a) the stimulus material presented, (b) the criterion of accuracy employed, and (c) the methodology used.

### Stimulus Material

As has been suggested by previous research (Rothenberg 1967), measuring Ss can be most genuinely accomplished when the stimulus material presents true-to-life social interactions rather than artificially isolated components of the social situation. The high degree of accuracy found in this study may have been the result of the simultaneous presentation of facial, verbal, vocal, body, and situational cues. No other study has employed stimuli that so closely approximated realistic social situations.

In addition, the stimulus situations had ecological

validity for the Ss in this study. The film episodes were constructed from the responses of children of the same age and of similar socioeconomic status, thus ensuring that the social situations had relevance for the Ss, and increasing the possibility of accuracy. Borke and Su (1971) employed a similar technique for obtaining ecological validity in their comparison of the accuracy of emotional recognition by American and Chinese Grade 2 children who were presented with situational cues. ~~A~~ Although the validation was done with kindergarten children while the test was conducted with Grade 2 children, their study demonstrated a high degree of accuracy. Therefore, it seems likely that the ecological validity in the present study did contribute to the high level of accuracy found.

#### The Criterion of Accuracy

In previous developmental studies, the criterion of accuracy has generally been the judgment of the investigators as to what emotion was portrayed. In the present study, the criterion of accuracy used was the adult standard: only those film episodes that portrayed emotions easily recognizable by the adults were used to test the children. This may have also enhanced the possibility of accuracy, and, at the least, provides a developmental criterion.

#### Methodology

In the present study the children, after responding to an open-ended question regarding the emotion portrayed, answered a multiple choice question aided by schematic drawing of the five possible emotional categories. As pointed out by Borke (1970),

this procedure clearly makes the task within the capabilities of young children. Using the procedure with three to eight year old children, she found quite a high level of accuracy in the recognition of emotion from situational cues alone.

Dimitrovsky (1964) used a similar method and found low accuracy; however, this may have been due to the fact that her Ss were required to judge emotion from vocal information only. It does seem likely that the specific methodology employed in the present study contributed to the level of accuracy being higher than that generally found.

### Reliability

These three improvements over the previous developmental research on the recognition of emotion resulted in a measure of social sensitivity that not only demonstrated a very high level of accuracy among children seven to eleven years of age, but also demonstrated reliability over time. Gates (1923) found very poor reliability with children from five to twelve years of age over a two-week interval. Rothenberg (1970) also reported poor reliability over a two-week period. In the present study the accuracy scores were reliable over a one month interval. The children not only received approximately the same accuracy scores, but also made the same responses regardless of accuracy. It seems that the use of: (a) stimulus material that closely approximated realistic social situations with the simultaneous presentation of facial, verbal, vocal, body, and situational cues, and that had ecological validity for the Ss, (b) an adult standard as the criterion of accuracy, and (c) a methodology that required

the Ss to respond to specific questions regarding the emotion portrayed, either verbally or behaviorally has resulted in higher accuracy and higher reliability. The relative contribution of these factors needs to be determined by further research.

### Emotion Portrayed

The level of accuracy varied with the specific emotion portrayed. "Sad" was most often accurately recognized, closely followed by "scared", "happy", "angry", and finally "surprised", in descending order. These data seem to contradict the previous research which has generally found "happy" to be the earliest and easiest emotion to recognize. However, upon closer examination of the responses, it becomes clear that the present study is not in disagreement. "Happy" is confused only with "surprised", and "surprised" is confused primarily with "happy". The positive emotions may be assimilated into "happy". "Sad" is almost always labelled correctly as "sad", but "angry" is often also labelled "sad", and both "scared" and "surprised" are also sometimes labelled "sad". Despite the limited number of emotional expressions used in the present study, the results suggest that the earliest differentiation of emotions expressed by others may be between generalized pleasant states and generalized unpleasant states. There is some experimental evidence (Walton 1936, Borke 1970) to support this suggestion. In addition, the proposed developmental scheme parallels Bridges' conclusion (1932) regarding the development of emotional expression. The present study also suggests that there may be a tendency for children to label all pleasant states "happy" and all unpleasant states "sad". Evidence of such

a tendency was found by Ames (1958) who reported that some children tended to label facial expressions as either "happy" or "sad" even though they knew the meanings of more precise emotional words which had been suggested to them. This hypothesis is further supported in the present study by the failure to find differential accuracy between the positive emotions portrayed and the negative emotions portrayed. Further study is required to determine whether this differentiation process would be found with a more extensive sample of emotional portrayals and with a broader range of age levels.

#### Emotional Expressor

Accuracy of recognition was higher in the judgment of adult-portrayed emotions than in the judgment of child-portrayed emotions. Because of the small number of actors, definite generalizations can not be made without further study. The adult actors may have been more effective in their portrayals. The subjects may have paid more attention to the adults than the children. There are not enough data on the affect attention measure to analyze this possibility; however, it does appear that the children did not spontaneously mention the adult emotions as often as they mentioned the child emotions. Inspection of the errors reveals that the largest difference was in judging "angry". Although the Ss were as accurate as the adult standard in their judgments of the adult-portrayed "angry", they were poorer than the adult standard in their judgments of the child portrayed "angry". Perhaps an unpleasant emotion portrayed by an adult is more often labelled as the more powerful "angry", and an unpleasant



emotion portrayed by a child tends to be labelled as the less powerful "sad". An alternative hypothesis is that the development of subtle differentiation among emotions may proceed more rapidly in the recognition of adult emotions, with a slight lag in the recognition of child emotions. A third possibility is that projection may have served to decrease accuracy of recognition of the child emotions. Rothenberg (1970) and Dymond et al (1952) have suggested that projection may serve to increase or decrease accuracy of recognition depending on the actual similarity of the Ss to the stimulus persons. Because the stimulus situations in the present study were specifically chosen to have ecological validity for the Ss, it may be argued that the high level of accuracy found was due to the effect of projection. Therefore, it seems unlikely that in the present study projection served to decrease the accuracy of recognition of the child-portrayed emotions. Further investigation is needed to determine if this differential accuracy would be found with a more extensive sampling of emotional portrayals.

#### Age Differences

Contrary to previous research, no age differences were found; a very high level of accuracy was found at both grade levels. One reason for the lack of an age trend may be that only those emotional portrayals that were very easily recognizable by adults were used. Accuracy of recognition needs to be investigated at younger age levels to examine the possibility of a developmental trend.

## Affect Attention

Another reason that such low levels of accuracy have been found in previous studies may be that accuracy and affect attention have not been separated. The results of the present study suggest that it is profitable to distinguish between two components of social sensitivity: (a) accuracy, and (b) affect attention, as implied by Flavell's model of interpersonal inference (1973). The children were as accurate as the adults on the multiple choice questions but they did not spontaneously mention much emotional content. There was a small but significant correlation between accuracy and affect attention, indicating that these two components are interrelated. The failure to separate these two components in earlier studies may have caused the reported low level of accuracy. Children when forced to make a choice regarding emotional inference are as accurate as adults, but they generally do not feel the need to make such inferences. It is proposed that research be extended to younger age levels to determine the developmental progression of these two components and their interaction over time.

### Suggested Areas for Future Investigation

The stimulus material could be employed to test for the effectiveness of each of the various cues (facial, verbal, vocal, etc.) in portraying emotions. However, a problem with the broad approach taken in the present research is that control over the amount of exposure of each of the various stimulus cues was sacrificed in the attempt to obtain realism and ecological

validity. Rather than artificially isolating the various components of the social situation, a better approach might be to present realistic social situations and then to investigate the correlations between accuracy of recognition and the amount of exposure of each of the stimulus cues.

These measures of social sensitivity could also be used to investigate the relationship of accuracy and affect attention to several variables of theoretical interest. How is intelligence related to the two components of social sensitivity? How is social sensitivity related to emotional disturbance? Conversations with the teachers revealed that the three children with the lowest accuracy scores had family problems. How is social sensitivity related to an individual's own emotional expressiveness? It seems likely that empathic responsiveness, as measured by physiological indices, would be closely related to affect attention, with little or no relationship with accuracy. How are accuracy of emotional recognition and affect attention related to behavior? How is an individual's social sensitivity to others' emotional states related to his sensitivity towards himself?

APPENDIX A

Frequency Distribution of Responses of 39 Elementary School Children as to what Situations Evoked Five Specific Emotions

<u>EMOTIONS</u>	<u>EVOKED BY:</u>	<u>FREQUENCY</u>
Happy	going out with parents to restaurants, recreational activities, special events	43
	receiving presents	25
	being allowed to do something out of the ordinary	13
	miscellaneous	<u>2</u>
		83
Angry	fighting with siblings and/or friends	29
	not being allowed to do something	16
	having to do something unpleasant	12
	parents being angry	4
	miscellaneous	<u>1</u>
	62	
Scared	alone in the dark at night	20
	seeing accident and/or near accident	16
	hearing news reports, watching TV and/or movies	8
	animals	7
	miscellaneous	<u>13</u>
	64	

APPENDIX A (Cont'd.)

<u>EMOTIONS</u>	<u>EVOKED BY:</u>	<u>FREQUENCY</u>
Surprised	being given something nice unexpectedly	37
	having accomplished something	4
	seeing someone else accomplish something	3
	going on an outing	4
	having something un- expected happen	6
	having relatives visit	4
	miscellaneous	$\frac{1}{59}$
Sad	not being allowed to do something	18
	human or animal being hurt	14
	human or animal dying	9
	getting into trouble	10
	miscellaneous	$\frac{4}{55}$

APPENDIX BDistribution of Emotions over the  
Edited Film Episodes

<u>EMOTION</u>	<u>ADULT FREQUENCY</u>	<u>CHILD FREQUENCY</u>
Happy	6	4
Angry	5	5
Scared	2	5
Surprised	7	6
Sad	7	7
	—	—
Total	27	27

APPENDIX C

## The Format of the Questionnaire Used in the Validation Test

Page 1: Name \_\_\_\_\_  
 Age \_\_\_\_\_  
 Sex \_\_\_\_\_  
 Date \_\_\_\_\_  
 Course \_\_\_\_\_  
 Tutorial \_\_\_\_\_

Page 2: Describe what happened in the film

Page 3: What was the child feeling?  
 What was the adult feeling?

Page 4: Circle the one word that best describes what the child was feeling?

happy

angry

scared

surprised

sad

Circle the one word that best describes what the adult was feeling?

happy

angry

scared

surprised

sad

Page 5: Additional comments

APPENDIX D

## Validation Test Instructions

- "Please fill in the first page, but do not turn any of the pages until I ask you....
- I am going to show you a short film episode of a social interaction and then ask you to answer a few questions about it.
- First I am going to show you a sample film. I will not ask you any questions about this film. It is just to give you an idea of what the other film will be like. Ready?... (Show sample film.)
- The other film will be similar in nature. I am going to ask you questions about this film. Ready?... (Show test film.)
- Please turn the page and answer the question there....
- Please turn to the next page....
- And the next page....
- OK. I want to show you the film once more. Ready?.... (Show test film again.)
- If you wish to make any additional comments after seeing the film for a second time, do so on the next page."



APPENDIX E

## Test Instructions

- "I am going to show you a few short movies.
- I am going to ask you a few questions about them and tape-record your answers.
- First I am going to show you a sample movie. I will not ask you any questions about this movie. It is just to give you an idea of what the other movies will be like. Ready?... (Show sample film.)
- The other movies will be similar. I am going to ask you questions about the other movies. Ready?... (Show first test film.)
- Tell me what happened in the movie. (This same question is asked after the presentation of each of the four remaining films.)
- I am going to show you the movies again. Ready?... (Show first test film again.)
- Tell me how the child was feeling?...
- How was the adult feeling?...
- Which one of the following words best describes how the child was feeling: happy, angry, scared, surprised, or sad? (Point to the appropriate schematic drawing as each emotion is mentioned.)
- Which one of the following words best describes how the adult was feeling: happy, angry, scared, surprised, or sad? (Point to the appropriate schematic drawing as each emotion is men-

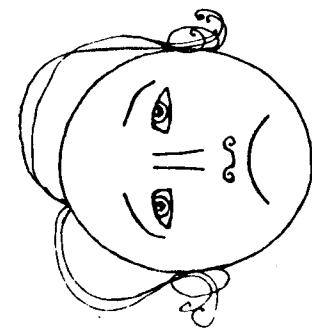
APPENDIX E (Cont'd.)

tioned.)

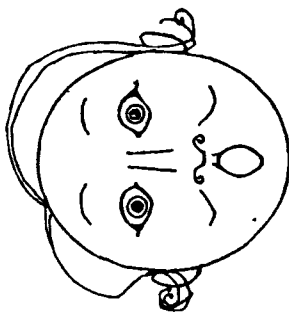
(The last four questions are asked after the representation of each of the four remaining films.)

APPENDIX F

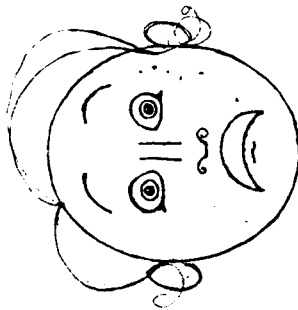
Schematic Drawings Used in the Test  
to Assist the Multiple Choice Responses



sad



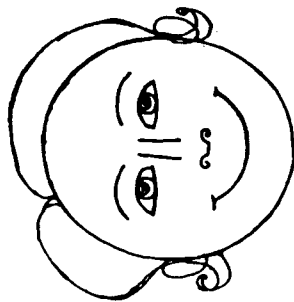
surprised



scared



angry



happy

Description of the Teacher Rating Scales Used in the Test

SENSITIVITY TO OTHERS:

Overall rating on child's sensitivity to the feelings or moods of other children or adults

Child always notices the feelings or moods of others; unusual awareness and concern

average child notices the feelings or moods of others if he is not otherwise engrossed; may ignore such with people he dislikes

child never seems to notice the feelings or moods of others

1

2

3

4

5

FACIAL EXPRESSIVENESS:

Trait refers to the amount of facial change disregarding involuntary facial movements. It does not matter what the expression is. A child who has a standard smiling (or frowning or neutral) facial expression on at all times is an unexpressive child; whereas the child who changes from one expression to another is an expressive child

Child has a very expressive face; frequent changes of expression

average child

child has a very unexpressive face; his expression changes very suddenly

1

2

3

4

5

NOTICING STIMULI:

Overall rating on the child's sensitivity to all kinds of stimuli in his environment; his awareness of the sights, sounds, smells, tastes, and/or touches of objects surrounding him

APPENDIX G (Cont'd.)

NOTICING STIMULI: (Cont'd.)

Child very interested in all kinds of stimuli; takes a great deal of notice in sights, sounds, tastes, touches of things

1 2

average child - on some occasions he notices, but on other occasions he is not interested in sights, sounds, tastes, touches of things

3

4

child not at all interested in the sights, sounds, tastes, smells of things

5

FRIENDLINESS:

Friendly child tends to seek out and react positively to other children or adults. Child's success in such contact is some criterion of friendship. Friendliness implies an adaptive response on the part of the child to advances of others. Shyness is characterized by hesitancy, by fearful behavior in response to social situations

Child shows an open friendliness to everyone; quick to make friendly approaches; does more than meet others half way

1 2

average child - friendly to others on some occasions, but shy on others

3

4

child chronically shy in social situations; afraid of and avoids social contacts with children and adults

5

ACTIVITY LEVEL

Trait refers to the average amount of physical activity exhibited by the child on a normal day

Child is very active; consistently prefers to be doing active quietly

1 2

average child - shows the ordinary mixture of activity and passivity

3

4

child is very passive; always prefers quiet or no activities to active plays

5

APPENDIX G (Cont'd.)

SOCIABILITY:

This trait concerns primarily the degree to which the child's interests are directed towards others, the group, etc. or to individual activities which do not necessarily involve the group. Refers to motivation and not to behavior

Child absorbed at all times in group or in what others are doing; interested in socially acceptable activities

average child - on some occasions likes to be with other children, but on others prefers to be alone

very unsociable, individualistic; does not desire the company of other children

1

2

3

4

5

APPENDIX HInstructions for Scoring the Affect Attention  
Data

Each item that falls into any of the following categories should be underlined and labelled with the appropriate category

STRICT:

1. The use of the name of an emotion  
i.e. happy, sad, excited, scared, sad, surprised
2. The description of a physical action denoting an emotion  
i.e. cry, laugh, frown
3. The use of the verb "feel" along with an emotionally evaluative word  
i.e. feel better, feel good, feel worse, feel sorry.

MEDIUM:

1. The use of any noun or verb that denotes emotion  
i.e. nightmare, bad dream, surprise, fun, fight, doesn't get along with someone, cheer someone up, get on someone's nerves, bug someone, disturb someone, miss someone, didn't like someone or something, shouting, yelling, complaining.

N.B. When the emotional phrase is simply repeated twice in immediate succession, it is only scored once in that category; however if two ideas are expressed, two points should be given

APPENDIX H (Cont'd)

i.e. "he bawled them out he had he bawled them out"  
(1 point in medium category) (they were yelling and  
then screaming" (2 points in the medium category).

LIBERAL:

1. Any case in which the reference to the emotion is stated  
as a direct repetition or paraphrase of the words of the  
film

i.e. he said he was sorry

she said 'are you excited?'

he told them they shouldn't yell at each other

she said 'oh boy'

the girl said he keeps bugging me



## APPENDIX I

Accuracy Scores Across Testing Situations (N = 20)

	<u>Ss</u>	<u>MALES</u>		<u>FEMALES</u>	
		<u>TEST</u>	<u>RETEST</u>	<u>TEST</u>	<u>RETEST</u>
GRADE 3	1	8	8	8	8
	2	8	8	8	8
	3	9	8	9	9
	4	7	9	7	8
	5	9	10	10	8
GRADE 5	1	9	9	10	7
	2	10	10	9	10
	3	10	10	7	8
	4	9	9	7	8
	5	9	8	7	9

APPENDIX J

Agreement of the Subjects' Responses  
Across the Testing Situations

<u>SUBJECTS</u>	<u>PERCENTAGE AGREEMENT</u>	<u>Z SCORE</u>
1	60	2.4 *
2	90	4.8 *
3	90	4.8 *
4	90	4.8 *
5	80	3.6 *
6	100	4.9 *
7	100	5.5 *
8	100	5.5 *
9	100	5.5 *
10	90	4.7 *
11	100	5.9 *
12	80	4.3 *
13	80	4.3 *
14	60	2.7 *
15	80	4.3 *
16	60	2.1 *
17	100	5.5 *
18	90	4.9 *
19	80	3.5 *
20	90	4.7 *

$\bar{X} = 86$

\*  $p < .05$

APPENDIX K

## Accuracy Scores for the Total Sample

<u>GRADE</u>	<u>SUBJECT</u>	<u>MALES</u>	<u>FEMALES</u>
3	1	8	8
	2	8	8
	3	9	9
	4	7	7
	5	9	10
	6	6	9
	7	8	4
	8	9	8
	9	9	8
	10	9	9

$\bar{X} = 8.2$        $\bar{X} = 8.0$   
 S.D. = .94      S.D. = 1.50

5	1	9	10
	2	10	9
	3	6	7
	4	10	7
	5	9	7
	6	8	7
	7	8	8
	8	9	9
	9	9	9
	10	9	10

$\bar{X} = 8.7$        $\bar{X} = 8.3$   
 S.D. = 1.10      S.D. = 1.20

APPENDIX L

## Data on Teacher Rating Scales

	<u>Ss</u>	<u>TRS #1</u>	<u>TRS #2</u>	<u>TRS #3</u>	<u>TRS #4</u>	<u>TRS #5</u>	<u>TRS #6</u>
<u>GRADE 3</u>							
<u>MALES</u>	1	3	3	2	4	4	3
	2	3	4	2	4	3	3
	3	3	2	2	3	2	2
	4	4	3	4	4	4	4
	5	3	4	2	4	3	3
	6	3	2	3	3	2	3
	7	3	2	3	3	3	2
	8	4	2	3	3	2	4
	9	4	3	4	4	2	4
	10	4	2	2	3	2	4
<u>GRADE 3</u>							
<u>FEMALES</u>	1	3	3	2	4	3	2
	2	3	4	1	4	3	2
	3	2	2	2	2	2	3
	4	4	4	4	3	3	4
	5	3	2	2	3	3	2
	6	4	4	4	4	5	3
	7	3	3	3	3	3	3
	8	2	2	2	3	3	3
	9	3	2	2	3	3	3
	10	3	2	3	2	3	2

APPENDIX L (CONT'D)

	<u>Ss</u>	<u>TRS #1</u>	<u>TRS #2</u>	<u>TRS #3</u>	<u>TRS #4</u>	<u>TRS #5</u>	<u>TRS #6</u>
<u>GRADE 5</u>	1	2	2	1	1	2	2
<u>MALES</u>	2	3	3	3	3	4	4
	3	4	2	3	3	1	4
	4	3	3	2	4	4	2
	5	3	3	3	3	3	1
	6	3	4	3	4	2	4
	7	3	3	3	3	3	3
	8	4	2	3	2	2	2
	9	4	3	3	2	2	3
	10	3	2	3	4	3	2
<u>GRADE 5</u>	1	4	1	1	3	3	5
<u>FEMALES</u>	2	2	3	2	2	3	3
	3	3	3	3	3	3	3
	4	2	2	2	4	3	1
	5	4	5	5	3	3	5
	6	3	4	3	4	4	3
	7	3	3	3	3	3	3
	8	3	3	3	4	3	3
	9	3	2	3	3	3	3
	10	2	2	2	3	3	2
<u>MEAN</u>		3.13	2.75	2.65	3.18	2.88	2.93

APPENDIX M

## Affect Attention Data - Grade 3

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Strict	1	0	0	0	0
	2	1	1	1	1
	3	4	3	1	1
	4	1	1	1	1
	5	1	1	1	1
	6	0	0	-	-
	7	0	0	-	-
	8	0	0	-	-
	9	0	0	-	-
	10	0	0	-	-
	11	0	0	0	0
	12	0	0	1	1
	13	2	2	3	3
	14	0	0	1	1
	15	2	2	2	2
	16	0	0	-	-
	17	0	0	-	-
	18	2	1	-	-
	19	2	2	-	-
	20	<u>0</u>	<u>0</u>	<u>-</u>	<u>-</u>
		15	15	11	11

APPENDIX M - (Cont'd.)

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Medium	1	1	1	1	1
	2	1	1	1	1
	3	2	2	0	0
	4	1	1	1	1
	5	1	1	1	1
	6	3	3	-	-
	7	1	1	-	-
	8	3	3	-	-
	9	1	1	-	-
	10	1	1	-	-
	11	1	1	1	1
	12	2	2	1	1
	13	2	2	1	1
	14	1	1	1	1
	15	3	3	2	2
	16	1	1	-	-
	17	1	1	-	-
	18	3	4	-	-
	19	2	2	-	-
	20	<u>1</u>	<u>1</u>	<u>-</u>	<u>-</u>
		33	34	10	10

APPENDIX M - (Cont'd.)

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Liberal	1	2	2	0	1
	2	0	0	0	0
	3	2	3	3	3
	4	0	0	1	2
	5	0	0	1	1
	6	0	0	-	-
	7	0	0	-	-
	8	0	0	-	-
	9	0	0	-	-
	10	0	0	-	-
	11	0	0	0	0
	12	2	2	3	3
	13	0	0	1	1
	14	0	0	0	0
	15	2	2	1	1
	16	1	1	-	-
	17	0	0	-	-
	18	1	1	-	-
	19	1	1	-	-
	20	<u>0</u>	<u>0</u>	<u>-</u>	<u>-</u>
		11	12	11	13



APPENDIX M - (Cont'd.)

## Affect Attention Data - Grade 5

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Strict	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	2	2	-	-
	5	0	0	1	1
	6	0	0	-	-
	7	1	1	-	-
	8	3	3	-	-
	9	2	1	-	-
	10	5	5	-	-
	11	3	3	7	7
	12	1	1	1	1
	13	0	0	1	1
	14	0	0	1	1
	15	2	2	1	1
	16	1	1	-	-
	17	2	2	-	-
	18	3	3	-	-
	19	2	2	-	-
	20		<u>1</u>	<u>1</u>	<u>-</u>
		28	27	12	12

APPENDIX M - (Cont'd.)

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Medium	1	1	1	1	1
	2	1	1	3	2
	3	1	1	3	2
	4	4	4	-	-
	5	1	1	3	3
	6	1	1	-	-
	7	1	1	-	-
	8	1	1	-	-
	9	1	2	-	-
	10	1	1	-	-
	11	2	2	3	3
	12	2	2	5	5
	13	2	2	4	4
	14	1	1	1	1
	15	1	1	1	1
	16	1	1	-	-
	17	2	2	-	-
	18	1	1	-	-
	19	1	1	-	-
	20	<u>1</u>	<u>1</u>	<u>-</u>	<u>-</u>
		27	28	22	20

APPENDIX M - (Cont'd.)

<u>CATEGORY</u>	<u>Ss</u>	<u>TEST</u>		<u>RETEST</u>	
		<u>RATER 1</u>	<u>RATER 2</u>	<u>RATER 1</u>	<u>RATER 2</u>
Liberal	1	1	1	0	0
	2	1	1	1	2
	3	0	0	0	1
	4	0	0	-	-
	5	0	0	3	3
	6	3	3	-	-
	7	0	0	-	-
	8	3	3	-	-
	9	3	3	-	-
	10	0	0	-	-
	11	2	2	1	1
	12	0	0	0	0
	13	1	1	0	0
	14	0	0	0	0
	15	0	0	0	0
	16	0	0	-	-
	17	0	0	-	-
	18	2	2	-	-
	19	1	0	-	-
	20	<u>0</u>	<u>0</u>	<u>-</u>	<u>-</u>
		17	16	5	7

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