MEASUREMENT OF EMOTIONAL EXPRESSIVENESS IN PRESCHOOL CHILDREN: COMPARING DIRECT ASSESSMENTS OF AFFECT EXPRESSIVENESS WITH MEASURES OF SOCIAL COMPETENCE

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MEASUREMENT OF EMOTIONAL EXPRESSIVENESS IN PRESCHOOL CHILDREN:COMPARING DIRECT ASSESSMENTS OF AFFECT EXPRESSIVENESS WITH MEASURES OF SOCIAL COMPETENCE

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A Thesis

Submitted to

the Graduate Faculty of

Auburn University

in Partial Fulfillment of the

Requirements for the

Degree of

Master of Science

Auburn, Alabama
May 10, 2007

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THESIS ABSTRACT

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Master of Science, May 10, 2007
(B.S. Human Development and Family Studies, Auburn University, 2003)

131 Typed Pages

Directed by Brian E. Vaughn

The primary purposes of this study were to document the frequency and rate of affect expression for preschool children engaged in dyadic play, to determine the contextual constraints on such affect expression imposed by the child's age, gender, and race/ethnicity, to contrast observed affect expression with teacher rated affect expression, and to examine relations between the several affect expression measures and measures of peer social competence. A total of 183 preschool children (84 females, 99 males) participated in this study. Analyses suggested that the expression of both positive and negative affect increased with age and that rates of affect expressivity were higher for

children from European-American backgrounds than from other race/ethnicity groups. Despite the mean differences associated with age and race/ethnicity, the patterns of association among variables and between sets of variables were not meaningfully different, indicating that the interpretation of affect expressiveness does not differ by age or race/ethnic status. Teachers' ratings of child positive and negative affect had only modest associations with observed rates of affect expression; however, teachers' ratings relevant to reactivity/regulation did show a moderately strong relation with observed negative affect expression. Analyses predicting measures of peer social competence from affect expression indicators showed that both positive and negative affect expression were related to sociometric acceptance scores and categories of peer interaction. For the teacher ratings of affect (but not observed expression of affect), significant associations with Q-sort measures of social competence were also obtained. Regression analyses using both observed affect expression and teacher-rated affect scores indicated that both sets had unique, significant associations with the social competence outcomes (although these varied across the social competence indicator set). The results are interpreted as evidence that affect expression is a salient feature of children's experience in the preschool classroom. These results are consistent with interpretations of affect expression from positive psychology and from developmental theories of emotional competence.

ACKNOWLEDGEMENTS

The author would like to express her thanks to Dr. Brian Vaughn for his guidance and patience throughout this project. The author would also like to thank her husband, Wynn, for his help, support, and patience during the past few years.

Style manual or journal used Publication Manual of the American Psychological Association, Fifth Addition

Computer Software used Microsoft Word 2002

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I. INTRODUCTION

Developmental scientists have maintained an active interest in children's emotions and emotional development more generally for several decades (e.g., Cole, 1986; Denham, 1998; Goldsmith & Campos, 1982; Izard & Malatesta, 1987; Lewis, 2003; Lewis & Brooks-Gunn, 1978; Lewis & Michaelson, 1983; Rosenstein & Oster, 1988; Saarni, 1999; Schore, 1994; Sroufe, 1979, 1996). Recognition that emotions are intricately woven into the fabric of social transactions throughout infancy, childhood, and adolescence has prompted a substantial research effort to identify and characterize the developmental trajectories of the range of skills underlying the capacity now referred to as "emotional competence" (e.g., Brown & Dunn, 1996; Denham, Blair, DeMulder, Levitas et al., 2003; Saarni, 1999). Although many skills have been identified in this search, three areas or domains have received the bulk of attention: namely, recognizing and understanding emotions in self and others, regulation of emotional reactions and the behaviors that may be contingent on emotions, and the appropriate expression of affect/emotion, (e.g., Ashiabi, 2000; Cole, Martin, & Dennis, 2004; Denham, 1998; Denham et al., 2003). These domains are characterized as interrelated insofar as acquisition of underlying skills in one domain (e.g., understanding) should facilitate the acquisition of related skills in other domains (e.g., expression) (see Denham, 1998; Saarni, 1999). Current conceptualizations of emotional competence are also contextualized with reference to endogenous (e.g., gender, temperament) and exogenous

(e.g., differential socialization, cultural differences) parameters that may influence development in each of the three domains (see Saarni, 1999, for extended discussion).

Although emotions and emotional competence are relevant from infancy forward throughout the lifespan, most studies of emotion understanding and regulation do not recruit participants younger than three years of age, since younger children often lack the verbal skill required to report on their own experiences or knowledge directly. During the preschool period (nominally 3–5 years of age), children acquire emotion labels and become increasingly aware of the communicative meanings of basic and complex emotion signals, for both self and others (Denham, 1998; Russell, 1990, 1994; Saarni, 1999). Across this same time period, children are expected to be increasingly capable (and responsible) for regulating the display of affect, perhaps especially negative affect (usually distress) and emotion and for regulating behavior motivated by anger, fear, and surprise (e.g., Kopp, 1989). They also become able to deliberately manipulate the emotional states of others (e.g., Saarni, 1992). Of course, children experience most emotion states well before they can understand or communicate about them or regulate them independently (although all parents are aware that infant emotion states are powerful regulators of adult behavior). Basic emotion states (e.g., Ekman & Friesen, 1975; Izard 1993; Oster, 1978) are seen during infancy, and social emotions (e.g., shame, guilt, pride) emerge during the toddler years (e.g., Lewis, 2000; Saarni & von Salisch, 1993). During the preschool years (and beyond) children become able to adjust their expressions of affect and emotion to both their audience and the context (Saarni, 1999). It is interesting to note that individual differences with respect to expressiveness (e.g., range, frequency, intensity of expression) are less studied than are such differences with

regard to understanding and regulation, except as indices of temperamental differences (e.g., Goldsmith & Campos, 1982).

Perhaps because individual differences have been more salient than developmental schedules in social/emotional developmental research over the past 20 years, emotion understanding and emotional regulation have been the foci of most recent research, at least during the preschool period. Although expressiveness measures are frequently included in studies of preschooler's understanding and regulation of emotion/affect (and emotionally motivated behavior), expressiveness tends to be treated as an outcome contingent on levels of understanding or regulation, rather than as a separate (albeit related) developmental phenomenon (e.g., Arsenio, Cooperman, & Lover, 2000; Cole et al., 2003; Cole, Zahn-Waxler, Usher, & Welsh, 1996). This seems curiously inconsistent with characterizations of the three domains as interdependent, as opposed to being embedded or contingent (e.g., Denham, 1998; Denham & Holt, 1993; Denham et al., 2003). Thus, one primary purpose of the study is to focus directly on preschool children's expression of affect and on the socio-demographic (e.g., gender, age, ethnicity) parameters that may influence their affect expressions. Secondary to these considerations, relations between expressiveness and capacities for regulation of affect are also evaluated.

A second primary purpose of the study is to consider whether and how individual differences in the expression of emotion/affect map onto independent measures of peer social competence. Denham and associates (e.g., Denham, 1998; Denham et al., 2003; Denham, Mason, Caverly, Schmidt et al., 2001), among others (e.g., Brown & Dunn, 1996; Zeman & Shipman, 1996) argue that emotional competence is a conceptually

antecedent pathway to social competence. It is not clear, however, that the conceptual distinction between emotional and social competence is necessary and it has proven quite difficult to maintain the distinction empirically because both emotional and social competence are thought to emerge (at least in part) from a common social process (i.e., caregiver-child interaction; see Sroufe, 1996; Sroufe, Egeland, Carlson, & Collins, 2005 for a discussion). Indeed, several research teams have defined social competence as the effective use of behavior, affect, and cognition in the service of attaining personal goals in social contexts, as long as one's attainment of goals does not constrain (too much) opportunities for social partners to attain their own goals (e.g., Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Rose-Krasnor, 1997; Waters & Sroufe, 1983), thus embedding affect-related skills in the meaning (and, in principle, measurement) of social competence.

Having identified the primary purposes of the study as a descriptive characterization of the expression of affect for preschool age children and the relations between individual differences with respect to aspects of affect expressiveness and measures of peer social competence, it may seem as though the path to a literature review is straightforward. Unfortunately, this is not the case. As noted above, relatively few studies of emotional functioning of preschool age children focus closely or exclusively on expressiveness *per se*. Rather, the majority of studies embed direct assessments (or more usually indirect assessments based on adult informants' responses to items on temperament, personality, or problem behavior questionnaires) of expressiveness in studies concerning understanding of emotion content or regulation of emotion-contingent behavior. Consequently the review that follows includes developmental approaches to

defining the domain of emotion and affect and developmental and individual differences information about expressiveness extracted from the available studies, including those whose central foci were regulation or understanding. Relations among measures of expressiveness, understanding, and regulation are also reviewed, as these are critical for evaluating the notion of "emotional competence." Next, studies examining relations between expressiveness and peer social competence are considered along with studies relating emotional competence (broadly construed) and social competence. In a third section of the review, measures of affect expressiveness are compared to measures of peer social competence to determine the degree of overlap across measurement domains. In the final section of the review, the larger study from which data for this proposed study derive is described and a précis of the specific research questions to be tested is provided.

II. LITERATURE REVIEW

Defining Emotions and Affects

Developmental scientists agree that emotions are complex phenomena involving the arousal system, the muscle and skeletal systems, and a range of brain systems including the limbic structures and the pre-frontal cortex. As such, there is no single, simple definition of emotions or affects and several different definitional schemes have been offered. One recent approach to defining emotion in terms of functions emotions serve has been offered by Campos, Fankel, and Camras (2004). In their view, emotion is a process that relates the person (experiencer) with the immediate environmental context (physical and social). Salience and meaning of the context for the person determines the valence of the emotion and the rapidity and intensity of the emotional response. Emotions have a personal meaning for the experiencing individual and a given context may arouse different emotions in different persons, depending on the person-specific salience of the context. In Campos et al.'s view, emotions regulate the actions of the experiencing person (an intrapersonal regulation of behavior and cognition) by motivating relevant actions toward or away from the context, as well as regulating the behavior and cognitions of other persons (as when an interaction partner perceives, interprets, and acts upon the expressed emotion of the other). In this view, the regulatory and cognitive (understanding) facets of emotion cannot be dissociated from expressive facets of emotion, although these facets all may change (develop) as children grow older.

In another approach to defining emotion, Lewis and Michalson (1983) proposed that emotion has five basic components: emotional elicitors, emotional affordances, emotional states, emotional expression, and emotional experience, with emotional experience being the most cognitive component of emotion because it requires access to a language of and about emotion. When children are able to link states and expressions, then feelings can be defined in terms of emotion labels. For Lewis and Michalson, affect is the expressive component of an emotion in efforts to attain social goals. Feelings are the internal arousal states experienced by persons. Recognizing the connections between eliciting conditions, possible affordances contingent on those eliciting conditions and the states and expressive components constitutes emotional experience. In Lewis and Michalson's formulation, the expression of affect is a strategy used to communicate emotions with others in order to obtain goals. For example a child responding negatively to being teased is verbally expressing how he feels in efforts to have his negative feelings alleviated. Feelings are internal, private events and expression communicates these internal events to others. Through the process of labeling those feelings they become emotions and the expression of affect is the attempt to communicate externally the emotions being felt. This approach to emotion emphasizes rational, cognitive processes to a greater extent than does the functional approach of Campos et al. (2004).

A third developmental characterization of emotion was offered by Sroufe (1979, 1996). In this model, the experience of "tension" and expression of affect are closely linked, although experience precedes expression. The infant/child's capacity to appreciate context gives the expression meaning. Initially, this capacity is non-cognitive but by 3 to 6 months, the infant's ability to comprehend context determines the valence of the affect

and its expression. Sroufe (1996) explicitly intended his model to bridge functionalist (e.g., Campos et al., 2004) and cognitivist (e.g., Lewis & Michalson, 1983) interpretations of emotions and their development. He used a constructivist developmental metaphor to suggest that affective experiences become reorganized in terms of their meaning and expressive components following a schedule that loosely corresponds to Piaget's stages of intellectual development during infancy and early childhood. Like both the functionalist and cognitivist approaches, Sroufe's epigenetic model of affect and emotional development emphasizes the social context of affect expression.

Research on emotional expressiveness has incorporated studies on facial movement (e.g. Ekman, Roper, & Hagar; 1980; Malatesta, Culver, Tesman, & Shepard, 1989), production and discrimination abilities (e.g. Field & Walden, 1982; Odom & Lemond, 1972), expressiveness in parent-child dyads (e.g.Berlin & Cassidy, 2003; Ramsden & Hubbard, 2002; Roberts, 1999), as well as studies involving emotion regulation and emotional understanding (e.g. Cole, 2004; Gronlick, Bridges, & Connell; 1996). Nevertheless, only a few studies have included direct observations of self-produced expressions of affect in infants or young children in naturalistic settings (e.g., LaFreniere & Sroufe, 1985; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984) and whether or how these may influence qualities of interaction, the judgments of peers about the child, or the opinions of salient adults (e.g. teachers, parents). By acknowledging the secondary, but prominent role expressiveness has played throughout emotion research, it would appear to be useful to investigate emotional expressiveness in young children as a direct indicator to behaviors and characteristics of social competence. The subsequent

sections of this review attempt to encompass the variety of research in which the study of emotional expressiveness has played a meaningful part. Additionally, studies on social and developmental influences of emotional expressiveness (e.g., age, gender) are also reviewed. Finally, research examining the relation between expression of affect and social competence is discussed.

Expressiveness in Emotion Research

As suggested above, only a few studies have focused exclusively on expression of emotion/affect or on individual differences in expressiveness. For the most part, expressiveness measures are embedded in studies of emotion understanding and/or affect regulation. When expressiveness is the explicit focus (e.g., Fabes, Hanish, Martin, & Eisenberg, 2002; LaFreniere & Sroufe, 1985; Miller & Olson, 2000) observations tend to involve interactions centered on interpersonal conflict and its resolution (or not). In other studies, expressiveness is treated as an outcome variable and related to (predicted from) problem behaviors (e.g., Rubin, Burgess, Dweyer, & Hastings, 2003), parenting practices, or family environments (e.g., Berlin & Cassidy, 2003; Garner & Power, 1996).

Expressiveness, regulation, and understanding. The ambiguity between emotional expressiveness, understanding/knowledge, and regulation can be understood when looking at the definitional properties of each construct. Emotional knowledge has been defined as the ability to identify facial expressions of common emotions, to describe eliciting circumstances, and to connect emotional experience with expressive display (Denham, 1998). One frequently used definition of emotion regulation is the ability to manage one's subjective experience of emotion, especially with regard to the intensity

and duration, and to manage strategically one's expression of emotion in communicative contexts (Campos, Mumme, Kermoian, & Campos, 1994).

When defined this way, expressive components of affect/emotion are necessarily intertwined with emotional understanding and affect regulation. When using direct observations to assess levels of understanding and regulation, it is almost impossible not to include expressiveness as an indicator. Emotion knowledge and understanding can be understood in terms of the increased expressiveness of children. As children get older, understanding increases in capabilities like recognizing causes and consequences of behaviors, showing sympathy for others, and understanding when and how to hide one emotion or simulate another (Cole, 1986; Saarni, 1999). Each of these skills may be inferred from the expression(s) of affect displayed (or not displayed) in specific contexts. Application of these skills in service of managing emotional tension/arousal and the expression of associated affects (e.g., minimizing negative expressions when aroused) constitutes a regulative aspect of emotion. Note that this formulation is more consistent with a cognitivist than a functionalist perspective in that a second regulating mechanism/process is invoked to constrain or enlarge the affect expression. The functionalist argument maintains that expression is regulation (single mechanism/process).

The overlap of the three emotional domains of expressiveness, understanding, and regulation is especially evident in the relations between the measures used to examine levels and differences with respect to each domain. In most of these studies, assessments of infant or child affect are obtained from test or analogue situations rather than from naturalistic observation and these are related to indirect assessments of expressiveness

(e.g. adult informants' responses to items concerning temperament or personality). These are then related to assessments of the child's understanding of emotion content or regulation of emotion-contingent behavior.

With respect to emotion regulation, assessment has often involved examination of expressiveness (most usually expressions of negative affects) in a manipulated context (e.g., receiving a less than desirable gift from an older relative or from a researcher) with the suppression, minimization, or substitution (of a different, unfelt) affect expression inferred to be indicator(s) of regulatory capacity (Cole et al., 1996; Gronlick et al., 1996). Cognitivist definitions of emotion regulation require this conflation of expressiveness and regulatory capacity, but also conflate regulation and knowledge about emotion eliciting contexts. In the paradigmatic context described above, the child receiving an undesirable gift is presumed to experience a negative affect but to mask that affect and substitute a different expression due a culturally imposed understanding that one acts positively when receiving a gift from an authority figure. However, because only the behavioral indicator of affect (expression) is observed, other processes must be inferred or assessed in different contexts using different formats (e.g., in an interview with the experimenter). These ambiguities have prompted some researchers (e.g., Denham et al., 2003) to question whether such tasks are measures of regulation or simply of expressiveness.

If findings on emotion regulation in children are based primarily on their expressions of emotions then there seems to be ambiguity in regards to what the outcomes actually reflect. For example, Gronlick, Bridges, and Connell (1996) assessed emotion regulation strategies and emotional expressiveness as the underlying mechanisms in emotion regulation. The authors reported associations between the

different types of regulation strategies children used in stressful situations and the differences in frequencies of negative expressions. The two stressful situations included observers placing a desired object out of reach from the child and a separation procedure from the primary caregiver. The type of regulation strategy and level of distress as indexed by negative emotional expressiveness were then evaluated. The frequency and intensity of affect expressions were negatively related to the regulation strategy of active engagement and positively associated with the strategy of focusing on the desired object and the search for parent during the separation procedure. In another example, Cole et al. (1996) assessed facial expressiveness during a negative mood induction task to identify three emotion regulation types (inexpressive, modulated expressive, and highly expressive). Facial expressions were coded for the presence of discrete emotions (e.g. happiness, anger, sadness, fear) and the total across the negative emotion expressions were used to categorize children into the three types. They found that vagal tone distinguished among the three types. Children in the inexpressive group had the lowest average vagal tone and children in the most expressive group had the highest average vagal tone. They noted that higher vagal tone is generally associated with positive social functioning for preschool children. This study is somewhat incongruous as it is not clear whether very expressive children should be seen as demonstrating greater emotion regulation in this task (as compared to the least expressive children).

As Cole and associates (2004) point out in their review of the emotion regulation construct, there are many definitional and methodical issues concerning emotion regulation that do not have definitive answers at this juncture. It is difficult (and Campos et al., 2004, argue impossible) to separate regulation from experience and expression of

emotion. The lack of clarity and definition of emotion regulation may hinder advances in research on emotional processes and development until a more satisfactory definition and model for measurement is developed.

Developmental Influences on the Expression of Affect

Age differences are a reflection of the increasing cognitive and emotional developments occurring as children mature (Saarni, 1999). During the preschool years, children are experiencing advancements in all aspects of emotional competence. Specifically preschool children, as compared to toddlers, are thought to be better able to share emotions with other children, to change the intensity of emotions as a function of the physical and context, and to express emotions that are more complex or differentiated (Denham, 1998; Malatesta, Culver, Tesman, & Shepard, 1989). Additionally, preschool children evidence emergent abilities in the voluntary management of emotional expression such as posing expressions, controlling expressiveness (to a degree), and using pretend and teasing behaviors (Denham, 1998; Lewis, Sullivan, & Vasen, 1987; Saarni, 1999). For example, Lewis et al. (1987) found that while toddlers could not pose any expressions correctly when asked, three year olds were able to pose happiness and surprise expressions. In another study, Strayer and Roberts (2004) found that age was related to children's emotional expressiveness with older preschool children having greater control over affect expressions and showing characteristically less intense emotional reactions than was true for younger children. Age related differences in the expression of affects reflect increases in language abilities and understanding. Malatesta et al. (1989) found that children's frequencies of vocal expressiveness increased from age

two to three. At age three children can talk about past emotional experiences as well as anticipate future experiences (Saarni, 1999).

Preschool age children are learning how to differentiate between their inner experience and outer expressive behavior, and therefore are beginning to modify their expressions in accordance with the contextual and cultural influences to which they are exposed (Saarni, 1999). With increasing age, children have greater exposure to social contexts beyond the family (e.g., school setting, peer interactions) and therefore more opportunities to experience emotions, which, in turn, extend their awareness of emotion-eliciting events and their responses to those events (Saarni, 1999). Furthermore, with increasing age, preschoolers show an apparent appreciation of the communicative function of affect expression. For example, Holodynski (2004) reported that older preschool children are less expressive when alone than when with others while engaged in emotion eliciting tasks. In sum, there are many changes taking place in emotional expressiveness during the preschool-age period. The acquisition of new abilities (e.g. posing expressions, controlling expressions), advances in language competence, and the exposure to new contextual and cultural environments all play an active role in the development and modification of affect expressiveness. Marked individual differences in expressiveness emerge and become stable as a consequence of these developmental and contextual factors.

Social Influences on the Expression of Affect

Relationships and attachment. Influences on the development of affect expressiveness include both socializing factors and biological factors. Considerable research effort has been focused on the socialization and parenting practices influencing

children's emotional development and expressiveness. Specifically, parent-child attachment security, use of encouragement of children's emotional expressions, use of control in children's expressiveness, and parental displays of emotions are all associated with children's ability to recognize, control, and display emotions (Berlin & Cassidy, 2003; Isley, O'Neil, Clatfelter, & Parke, 1999; Liable and Thompson, 1998; Ramsden & Hubbard, 2002; Roberts, 1999). Children with secure attachments to their parents show more positive expressiveness, more emotional understanding, and have better social outcomes (Isley et al., 1999; Liable & Thompson, 1998). In contrast, when parents exert efforts to control a child's expressiveness (which may be associated with depressed levels of security in the relationship), children show fewer affect expressions (Berlin & Cassidy, 2003).

Parenting practices tend to be associated with the level of affect expressiveness in the family environment, which also influences the quality of children's expressiveness (Garner & Power, 1996; Jones, Abbey, & Cumberland, 1998). Halberstadt and Eaton (1986) found that individuals from overall high expressive families sent emotional communications in conversations better than those from low expressive families. Additionally, Garner and Power (1996) found that maternal reports of sadness in the family environment were negatively related to children's positive displays of emotion.

Gender influences/gender socialization. Research on gender differences in young children's emotional expressiveness has provided insight to the possible differences in affect that might exist between boys and girls. However there are still discrepancies in expressiveness research on the influences of gender. Individual differences in expressiveness (e.g. range, frequency, intensity of expression) have been found in studies

examining the effects of gender and its associated socialization patterns (Davis, 1995; Fivush, Brotman, Buckner, & Goodman, 2000; Hubbard, 2001; Widen & Russell, 2003). Hubbard (2001) reported that boys expressed more facial, verbal, and nonverbal anger than girls. Other researchers have shown that girls tend to talk more about their emotions, are better at decoding and explaining emotions, and are more skilled at masking negative emotion, skills that may influence their expressive behavior (Brown & Dunn, 1996; Davis 1995). Research on gender differences has shown that girls have better capabilities for masking negative emotion expressions (e.g., anger) than boys (Davis, 1995). However, boys appear to have stronger abilities in inhibiting expressive behavior that might make them seem more vulnerable (e.g., fear, sadness), which brings to question whether one sex is actually better at masking emotions that the other (e.g. Casey, 1993; Fuchs & Thelen, 1988).

Gender socialization may also play a role in levels of emotionally expressive behavior. Children have shown a tendency to label the more complex emotions of others (e.g., fear, disgust) in accordance with gender stereotypes. For example, Widen and Russell (2003) reported that preschoolers tended to label the emotions of a girl character with happiness, fear, or sadness and more often label a boy character with anger. They suggested that this may reflect more commonly seen expressions in each gender or may be a consequence of exposure to gender stereotypes. In a different study (Fivush, Brotman, Buckner, & Goodman, 2000), both mothers and fathers were more verbally expressive about emotions during conversations about sad experiences with girls, which may support girls feeling more comfortable with and expressing sadness more than boys. In sum, the available evidence suggests that boys and girls may have different emotional

experiences in their social/family environments, but whether or not observed levels of positive or negative expressiveness show characteristic gender differences remains an open question.

Temperament and Personality. Another possible parameter for individual differences in children's affect expressions includes trait-based differences like temperament or personality. Indeed, many studies investigating temperamental qualities of children have included indices of temperament that are essentially individual differences in affect expressiveness (Arsenio et al., 2000; Rubin et al., 2003). Emotion expressions are associated with personality and temperament because they index feeling states, influence feeling states through sensory feedback processes, function as cues in social interactions, and elicit responses in other people (Abe & Izard, 1999). Findings from these studies suggest that temperament dimensions reflecting positive and negative affect expressiveness may predict aggressive or externalizing behaviors later in childhood (Arsenio et al., 2000; Rubin et al., 2003). The predictive utility of temperament is further supported in studies among different age groups, which found stability in personality/temperament. Abe and Izard (1999) found that observed affect in infants was related to observed and reported personality types at 3.5 years of age. Aksan, Goldsmith, Smider, Essex, Hyde, Klein, and Vandell (1999) also reported finding fair to moderate degrees of stability in temperament types, classified in terms of expressiveness levels (highly expressiveness *vs*. non-expressive) for preschool age children.

Whether these kinds of results imply stability due to an endogenous attribute of the child (temperament?) is open to question because these studies did not consider potential relationship and socialization influences on the stability of expressiveness (as

reviewed above). In addition, ethologically inspired observations of affect expressiveness during early infancy (e.g., de Weerth, van Geert, & Hoijtink, 1999) suggest dramatic intra-individual variability over the first six to eight months of life. Such observations suggest that whatever stability is observed after infancy is, at least in part, constructed by the child and the social context rather than solely reflecting endogenous traits.

Overall, there are various social-biological influences on the expression of affect including attachment/relationships, socialization, and temperament. In parent-child relationships, the security of the attachment can influence the degree and quality of expressiveness of the child as well as the quality of social relationships. Parents may also shape children's expressiveness with socialization strategies that are influenced by gender. Furthermore, whether the child is a girl or a boy may, by itself, influence expressiveness, though this is not always clear in previous research. However, temperament and personality are intertwined with emotions and feelings and appear affect the expressive behaviors of individuals.

Expressiveness and Peer Social Competence

Research on emotional expressiveness in peer relations has identified the importance that individual differences in expressiveness has in the way children view each other. Positive affect promotes social interaction by helping children initiate and regulate social interactions with each other (Sroufe, Schork, Motti, Lawroski, & LaFreniere. 1984). Measurements of peer acceptance (i.e., sociometric interviews) have been used to describe social competence in preschool children (e.g., Arsenio & Lover, 1997; Denham et al., 2003). Individual differences in affect expressiveness are predictive of measures of peer acceptance. Arsenio and Lover (1997) found that intensity and/or

frequency of affect expressions was associated with peer relations in that high intensities/frequencies of negative emotional expressiveness related to lower levels of peer acceptance. Denham et al. (2003) directly observed the expression of happiness, sadness, and anger during free play and they reported finding that children who habitually displayed positive emotional expressions were considered more socially competent through peer ratings and teacher assessments. Children's affect is also related to qualities of parental affect. Isley et al. (1999) found positive associations between parental affect and child affect. Furthermore, the relation between parental positive affect and child social competence with peers was mediated by child positive affect.

On a broader scale, several studies have found relations between emotional and social competencies. Denham and associates (e.g., Denham et al., 2001; Denham et al., 2003) have argued that children's emotional competence (defined in terms of age-appropriate understanding and regulation of emotional expression) is antecedent to and essential for competent performance in social contexts, especially in developing relationships with others. The intertwining of emotional and social competencies is especially salient during the preschool years when children are faced with the developmental tasks of learning about and managing emotions at the same time that they are initiating and maintaining positive interactions/relationships with peers. Whether or not it is productive to distinguish between emotion competence and social competence is debatable, especially in light of definitions of social competence that highlight the flexible modulation of behavior, cognition, and affect in the service of attaining social goals (e.g., Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Rose-Krasnor, 1997; Waters & Sroufe, 1983). This question is explored in more detail below.

Affect Expressiveness as an Indicator of Social Competence. A central goal of the present study is to consider whether and how individual differences in the expression of emotion/affect map onto independently derived measures of peer social competence. Therefore, in this section a discussion of the overlap between affect expressiveness and measures of peer social competence is presented.

Many of the parent or teacher report measures and scales used to index "social competence" include items that explicitly reference the quality of children's affect. For example, the Social Competence and Behavior Evaluation Scale (SCBES, LaFreniere & Dumas, 1996) includes items concerning facial expressiveness, sadness, anger, and pleasure of accomplishment. The Penn Interactive Peer Play Scale (Fantuzzo, Sutton-Smith, Coolahan, Manz, Canning, & Debnam, 1995) includes items concerning dysphoria as well as the display of positive emotions. Finally, the Interpersonal Competence Scale (Cairns, Leung, Gest, & Cairns, 1995) includes items concerning the expression of sadness and worrying, as well as characteristic levels of smiling and crying. Clearly, investigators studying social competence believe that the expression of affect is relevant to definitions of that construct. It is less clear, however, whether these investigators believe that affect expression is an antecedent to, a consequence of, or an integral component of social competence. Furthermore, these affect items are necessarily indirect measures insofar as they ask for the informant's perception of relative frequency for expressiveness and are not based on quantified observations of actual child behavior (but see Denham et al., 2003 and LaFreniere & Sroufe, 1985 for studies with quantified observational data). Consequently, the relation between rated affect and expressed affect (either frequency or intensity) is not known.

Affect-relevant variables from standardized instruments (e.g., SCBES) tend to produce scales that emphasize less well-adapted features of child character (e.g., externalizing or internalizing problem behaviors) and relations to other social competence measures tend to be signed negatively (e.g., Snider, 1999). In a few studies (e.g., Arsenio et al., 2000; Rubin et al., 2003; Walter & LaFreniere, 2000), observed (positive) affect has proven to be a positive correlate of independently assessed social competence measures. More often, however, when affect expressiveness measures are included in studies of peer social competence they are treated as secondary input or output variables or as mediators between socialization influences (e.g., parental control of emotional expressiveness, parental expressive behaviors) and peer social competence (e.g., Isley et al., 1999; Roberts, 1999). Strong conclusions from this literature are not justified, nevertheless, it does seem as though *observed* positive affect predicts social competence better than *rated* positive affect. Negative affect *ratings* tend to be positive predictors of maladaptation (and negatively related to social competence), and may be more efficient predictors than observed negative affect.

Given that the literature does not support firm conclusions concerning relations between expressed affect and social competence, further explorations are justified. In addition, it seems important at this point to explore the utility of both observed and rated affect expressiveness. One purpose of the present study is to determine the degree of convergence between observations of expressed affect in peer interaction contexts with ratings of affect quality and valence (positive and negative) for preschool children. Both of these measures can be related to social behavior and interview data relevant to social

competence as well as to teachers' ratings of children's social behavior and temperament/personality that are also relevant to social competence.

Research Questions

The different findings in the research on emotional development have established relations between emotion understanding, emotion regulation, and child social competence. However, relations between affect expressiveness and social competence are less well studied. Consequently, this study places special emphasis on the expression of affect and its relation to child social competence measures. The study is part of a larger investigation designed to increase our understanding of the friendship processes and peer relations of preschool children. The main research questions to be addressed are: (1) do demographic parameters (e.g., age, gender, ethnicity) play a role in individual differences with regard to the expression of positive and negative for preschool children; (2) do observed differences in children's expression of positive and negative affect show significant associations with teacher rated affect; and (3) do individual differences in observed and/or rated expressed affect show interpretable patterns of relations to measures of social competence derived from direct observation and sociometric interviews and/or to teachers' ratings of social behavior and temperament relevant to social competence? Affect expressiveness is assessed in the context of dyadic peer interactions. Social competence variables were scored on the basis of classroom observations and sociometric interviews. Teacher ratings were obtained using several standardized report instruments. Comparisons are also made across age, gender, and ethnicity breakdowns and differences in patterns of correlations across measurements are evaluated.

III. METHOD

Participants

A total of 183 3-and 4-year-old preschool children (84 females, 99 males) in 13 classrooms from two university administered early learning centers participated in this study. The younger age group consisted of 105 participants during data collection and 78 of the participants were in the older age group. Eleven classrooms were located in Birmingham, AL and from those classrooms data were collected in six three-year-old classrooms (younger children) and five four-year-old classrooms (older children). Two classrooms were located in the Auburn Early Learning Center in Auburn, AL and data were collected from one class of three year olds and one class of four-year-olds.

Measures and Procedures

Measures of affect expressiveness were collected along with three groups of social competence measures; visual regard received and initiations of interactions with peers; Q-sort descriptions based on observations, and sociometric interviews. Teacher ratings were also collected.

Affect Expressiveness Measures

The measures of affect expressiveness were derived from observations of dyadic play vignettes in which two children from the same classroom were taken to an observational laboratory located in the preschool and given the opportunity to interact using a toy (or toys, depending on the specific task). Each dyadic episode lasted five

minutes. For about half of the tasks, differentiated roles were named prior to the children's being given permission to start playing (e.g., driver vs. pit crew for a remotely controlled car) and for the other half of the tasks, roles were not defined (e.g., Play-Doh). The instructions did not specify which child would occupy which role. After instructions had been given and the children were named (while facing a video camera behind a half-silvered mirror), then they were told that they could play with the toy for five minutes. At that point, the research staff member sat in a chair at the side of the room and did not initiate any interactions with the pair until the end of the episode (unless the children engaged in high intensity conflict that did not become resolved quickly). Interactions were video recorded for subsequent decoding.

Video coding. Video tapes of the preschool dyad interactions were copied to digital files and decoded by teams of two coders. The dyad was observed and coded for affect in 15s intervals throughout the full 5 minute video clip. For each child affect was coded as positive, negative, or neutral. In some situations, children moved off the camera or had their back to the camera. In these situations, as well as ones involving any kind of sound or video problems, affect was coded as unscorable.

The video tapes of the preschool dyads were each coded by 2 graduate or undergraduate student assistants. Each of the observers was given a dyad coding manual which included instructions on video coding procedures. Observers were also trained and observed by faculty or expert graduate students on order to minimize error in coding procedures. Reliabilities were calculated for the observational video data using coefficient alphas. Coefficient alphas for this study ranged from .55 to .97 with a median of .84 indicating satisfactory reliabilities across the sample.

Social Competence Measures

Portions of the following descriptions of the assessments used for this study were taken with permission from Vaughn and associates and exist verbatim in previous publications by Vaughn and associates (e.g., Bost et al., 1998; Vaughn, 2001). The following measures of social competence have been frequently used in published literature on social competence in preschool children and have proven to be accurate assessments. The three classes of measures used in this study include: (a) comprehensive behavior/personality descriptions summarized using Q-techniques and scored for the social competence dimension, (b) visual regard received from peers and the initiation of positive, neutral, and negative interactions with peers, and (c) sociometric acceptance.

Q-sort measures of social competence. Q-sort observers worked in teams of two for each classroom. Independently, each observer spent between 16 and 20 hours observing the children in a given classroom. They took notes on the behaviors and attributes of individual children over this period, taking care to observe each child on several different days across a variety of activity settings (e.g. meal times, small groups, free-play indoors, outdoor play, transition activities such as standing in lines, and cleanup). When observations were completed, each of the two assistants described all of the children with two Q sets (Block & Block California Child Q-set-100 items-CCQ; and the Bronson revision of the Baumrind Preschool Q-set-72 items-PQ). If a child was absent from the classroom for over half a given observer's observation hours, he or she was not described by the observer.

Seven different graduate and undergraduate student assistants served as Q-sort observers over the years of data collection. Prior to data collection, all observers were

trained in the meanings of the items and instructed regarding items that they were not likely to be able to observe (such items were placed in the center of the Q-sort). Both Q-sets were sorted according to rectangular distributions with equal numbers of items (9 piles of 11, with the odd item sorted to the center for the CCQ and 9 piles of 8 items each for the PQ).

The Q-sort descriptions of each child were used to derive social competence scores for each child using the criteria published by Waters et al. (1983). Thus, the Q-sort description for a child provided by a given observer was correlated with the profile of the hypothetical child at the extreme for social competence that has been generated by aggregating the descriptions provided by experts in children's social development. The correlation between a Q-sort for a given child and the criterion sort for the construct becomes his or her score for that construct. This technique is commonly used to summarize Q-data and has been shown to yield valid and reliable scores over a range of personality and behavior relevant to constructs for children (e.g. Block & Block, 1980; Waters et al., 1985). Following the suggestion made by Waters et al. (1983) the scores were adjusted for social desirability response sets on the part of observers by controlling for social desirability in the Q-set while calculating the correlations between individual children and the criterion sorts. This criterion sort adjusts for the level of social desirability for each item in each Q-set. Cross-rater agreement scores for social competence scores were acceptable (range .5 to .8 for different coder-pairs).

Visual regard/interaction measures. This group of social competence measures was derived from observations of visual attention directed to peers and the initiation of positive, negative, and neutral behavior to peers. Working from class rosters, teams of

trained graduate and undergraduate students (2 to 6 observers per classroom) watched each child present in class for a six second interval and recorded the identity codes of peers receiving a unit of visual attention from the observed target. Two categories of visual attention were defined (see Vaughn & Waters, 1981). A look was defined as the orientation of head and/or eyes toward another person for a period of two seconds or more. A glance was defined as a similar orientation of head and/or eyes for less than two seconds. A target child was observed for each round of the class when the child's name appeared on a class list, and no child was observed twice before all children present were observed once. Scores were derived by calculating the sum of looks and glances received from peers. To adjust for absences and differing numbers of observational rounds across classrooms, rate scores were calculated by dividing the total visual regard received score by the number of rounds a child was present in class for observation. As with the Q-sort data, children absent for 50% or more of observation rounds were excluded from all inferential analysis of the data.

Previous research using this observation protocol has demonstrated that observers quickly reach agreement rates of 80% and above with only limited training. Kappa coefficients for visual attention received in this sample ranged from .60 to .90 across all rater pairs, median = .70.

The observers collecting visual regard data also collected data regarding the initiation of social interaction. Again, working from class rosters, observers watched each child present in the class for a given round for a 15 second interval. At the end of the interval, the observer recorded identifiers for each child with which the target interacted, a code for which child initiated the interaction, and a code for indicating the general

valence (positive, neutral, negative) of the interaction exchange. All physical contact was coded as an interaction, even when the contact was causal and may not have elicited a response from the recipient (e.g. a child standing in line briefly puts her hands on the shoulders of the child standing in front of her). Talking and playing together were coded as interactions, regardless of the topic of conversation or the content of play. Likewise, quarrels and agnostic actions were coded as negative interactions.

Kappa coefficients for the interaction codes ranged from .55 to .85 across the three interaction categories, median = .69.

Sociometric measures. Three different sociometric preference measures were administered individually by trained graduate students to all children in each classroom for whom parental consent forms had been received. These included a standard positive and negative nominations picture-sociometric (McCandless & Marshall, 1957), an Asher-type rating scale sociometric task (Asher et al., 1979), and a paired-comparisons picture-sociometric task (Vaughn & Waters, 1981). Photographs consisting of head and torso poses of all children in each classroom with parental consent to participate were prepared for each of the sociometric measures. Care was taken to ensure the child knew the names of each classmate prior to administering these tasks. The ratings scale task was usually administered first and followed by the nominations task, although this order was not invariant. The paired-comparisons task was always administered last. The tasks were completed in a quiet area away from the child's classroom to minimize distractions. The child received a colorful sticker at the completion of each task as a reward.

For the nominations task, both positive and negative nominations were elicited. Each child was presented with an arrangement (randomly mixed for each child) of

photographs of his/her classmates. From this arrangement, each child chose three peers whom he or she especially liked and three whom he or she did not especially like. After a child was chosen as either a positive or negative nominee, his or her photograph was turned face down. When the positive and negative choices had been registered, the child returned to the array and continued to identify children he or she liked until all photos were face down. Then a complete matrix of nominations data was generated. Primary scores were derived by calculating total number of times a child was chosen by peers in both positive (first three choices only) and negative choice segments. To adjust for differences in effective class sizes, these sums were divided by the number of children making ratings in each classroom. Secondary scores for this data set were derived from the order in which the child chose peers.

The second sociometric task was an Asher-type rating scale measure (Asher et al., 1979). Each child sorted photographs of all of his or her classmates into one of three containers. The containers were for children with whom the child liked to play with a lot, for children sort-of-liked to play with, or did not like to play. Schematic faces were attached to each container to help the child understand the meanings (e.g., smiling face for the container of children liked to play with a lot, neutral face for children sort-of-liked to play with, and frowning face for children not liked to play with very much). Following the model of Asher et al. (1979), children were pre-trained on the meanings of the three containers by asking them to rate food items (e.g. pancakes with syrup, a sandwich, cooked mushrooms). An average score was calculated by summing the ratings made by peers for a given child and dividing by the number of children in the classroom who provided ratings.

The third sociometric assessment was completed as a paired comparisons task. For each pair of children in the classroom (total number of comparisons in a given task= (n* n -1)/2), a card was prepared and shown to the given child being interviewed. The child was asked which of these two children do you especially like, for each pair. This task was time consuming and children occasionally got tired of it. The assistant administering the task was careful to monitor the child's apparent interest and stopped the testing session if the child became too distracted. None of the children took more than two 15- to 20- sessions to complete the task. An average score was calculated by summing the choices received from peers in the classroom and dividing that total by the number of peers making choices.

Teacher Assessments

The Bates' Child Characteristics Questionnaire. (Bates, Freeland, & Lounsbury, 1979) was used to assess child temperament. The following four components have emerged from the Bates inventory: persistent/unstoppable behavior (e.g., persistent or noncompliant when limits are set), negative adaptation and affect (slow adaptation to new situations), difficult behavior (frequency and amount of crying and whining), and irregular patterns (e.g., irregular eating and sleeping). Findings have shown moderate stability of the difficult temperament trait over 3.5 years from infancy to age 4 (Finnegan, Niccols, Zacher, & Hood, 1989.)

The Social Competence and Behavior Evaluation Scale-Short Form. (SCBE-30), identified as the Preschool Socio-Affective Profile (PSP) for this study, is a 30-item Likert rating scale that assesses patterns of social competence, emotion regulation/expression, and adjustment difficulties in young children (LaFreniere &

Dumas, 1996). Three components representing social competence, aggression, and anxiety-withdrawal have been identified in the PSP. Each factor, composed of 10 items, has been found to have high inter-rater and test-retest reliability, internal consistency, and temporal stability over a 6-month period (LaFreniere & Dumas, 1996).

The Interpersonal Competence Scale (ICS-T; Cairns, Leung, Gest, & Cairns, 1995) consists of 18 items that assess social and behavioral characteristics of children . The ICS-T yields three primary components (e.g., aggression, popularity, and academic ability), three subsidiary components (e.g., affect, olympian ability, and internalizing problems) and a total social competence score. The ICS-T has been found to have acceptable internal consistency and adequate short (e.g., 3 week) and long term (1 year) test-retest reliability.

The Teacher Rating Scale of Social Skill (Dodge & Somberg, 1987) consists of a six item social competence scale (scores range from 6 to 30), a four-item aggression scale (scores range from 4 to 20), and a seven-item social cognitive skills scale (scores range from 7 to 35). This measure is typically completed by the child's teacher. Responses to these scales are reported in previous studies to be internally consistent (coefficient alphas= .50 and .93, respectively) and reliable across teacher raters (Dodge & Somberg, 1987).

A behavior problems scale was also used for this study. There are 7 items and the responses range from 1 (not at all like the child) to 5 (very much like the child). The measure is completed by the child's teacher and measures qualities of peer interaction such as aggression, manipulation of peers, impatience, and name-calling. Coefficient alpha for the behavior problem scale was .95.

After using factor analyses on the teacher scales presented in the previous sections, it was determined that the principal component factors do not give a cohesive picture of the relationships within and across the various measures from which they are derived. Consequently, a different method was taken to present the content of the teacher measures. Items from the measures that were related were separated into one of five categories: regulation, reactivity, teacher rated positive affect, teacher rated negative affect, and life success. Between 4 and 17 items were grouped together in each of the five categories. The categories and their associated items and correlations between the categories are presented in Appendix A. The average of standard scores for items within each category becomes a "scale" with the category label. Because of the high correlation of regulation and reactivity (r=.91, p<.01) and the likelihood that teachers viewed these two categories as interchangeable, the items in these two categories were combined to create a dysregulation and reactivity scale. All four of these scales were used in lieu of the original factor scores because of their cohesiveness and the ability to examine relationships with these factors within and across age groups.

IV. RESULTS

Preliminary Analyses

Affect Variables. Appendix B provides descriptive statistics for the three positive expressiveness variables, rate of positive expressions (RTE POS), rate of positive expression matches for the dyad (RTE MATCH POS), and rate of positive matches given by the individual child (RTE CHILD MATCH POS), and the three negative expressiveness variables, rate of negative expressions (RTE NEG), rate of negative expression matches for the dyad (RTE MATCH NEG), and the rate of negative expression matches given by the individual child (RTE CHILD MATCH NEG). Because the rates of affect expressiveness more accurately describe relationships between the variables by incorporating how many times the participants were observed and coded for affect, these scores are used for the remaining analyses.

Descriptive statistics are also provided for the different groups within the sample, age gender, and ethnicity in Appendix B. The two age-groups were classified as "older" and "younger" children. The younger group of children where those in the three-year-old classrooms (n = 105) with ages ranging from 36 months to 48 months and the older group consisted of children in the four-year-old classrooms (n = 78) and were 48 months and older. Gender groups were also examined (males n = 100, females n = 83). The

participants were also divided into three groups based on ethnicity; European American (n = 110) African American (n = 63), and Other (n = 10) for those children not falling into the other two categories.

Principal Component Analysis. Principal component analyses were conducted separately for the each of the five scales rated by teachers, The Bates Child Characteristics Questionnaire (Bates et al., 1979), Interpersonal Competence Scale ((ICS-T; Cairns et al., 1995), The Preschool Socio-Affective Profile, (LaFreniere & Dumas, 1996), The Social Behavior Scale, and The Teacher Rating of Social Skills (Dodge & Somberg, 1987). Analyses of standardized data were performed for the whole sample and also for the older and younger participants separately. The resulting factors from the analysis for each age group revealed different structures for the younger participants than those of the older participants. The principal components for the standardized items for the whole sample are presented in Appendix E.

The principal components analysis of the standardized items from all five of the teacher measures yielded twenty components for the older sample. The item descriptions for the principal components of the older sample are presented in Appendix F. The breakdown of the components consisted of: six components created from the Bates Child Characteristics Questionnaire; five components created from the Interpersonal Competence Scale; five components from the Preschool Socio-Affective Profile; one component from the Social Behavior Scale; and three components from the Teacher Rating of Social Skills (See Appendix E for a listing of the component descriptions). Appendix G lists each component name and the amount of variance accounted for by each component.

The principal components analysis of the standardized items from all five of the teacher measures yielded twenty components for the younger sample. The item descriptions for the principal components for the younger sample are presented in Appendix H. The breakdown of the components consisted of: six components created from the Bates Child Characteristics Questionnaire; five components created from the Interpersonal Competence Scale; six components from the Preschool Socio-Affective Profile; one component from The Social Behavior Scale; and three components from the Teacher Rating of Social Skills (See Appendix I for a listing of the component descriptions). Appendix I lists each component name and the amount of variance accounted for by each component.

Because different factor structures within the teacher data were found for younger and older children, five separate factors were created from relevant items for the whole sample. By creating these scales, the sample could then be analyzed as a whole. The five scales were composed of items pertaining to teacher rated positive affect, negative affect, life success, and dysregulation and reactivity. Item descriptions of these components are presented in Appendix A. Correlations were performed on the five scales created and are listed in table 1.

Table 1

Correlational Analyses of Teacher Rated Scales Relating To Child Social Behavior and Temperament

	Teacher Rated Positive Affect	Teacher Rated Negative Affect	Teacher Rated Life Success	Teacher Rated Regulation
Teacher Rated Positive Affect				
Teacher Rated Negative Affect	-.48**			
Teacher Rated Life Success	.48**	-.27**		
Teacher Rated Dysregulation	-.25**	-.04	-.47**	
Teacher Rated Reactivity	-.22**	-.03	-.46**	.98**

**$p<.01$, *$p<.05$

As shown in the table, teacher rated dysregulation and teacher rated reactivity are very highly correlated. Therefore, the two scales were combined to form an overall scale for dysregulation and reactivity that will be used in the following analyses.

Research Question 1: What are the primary parameters associated with individual differences in positive and negative expressiveness among preschool age children?

In order to assess whether there were any parameters affecting individual differences in affect expressiveness for the children in the sample, Univariate Analyses of Variance were conducted for all subgroups for age, gender, and race and are presented in Appendix C. Because of the high collinearity between the overall rate of expressiveness variables and their associated matching variables, as shown in Table 2, the rate of positive expressiveness was entered as a covariate for the rate of positive matches and the individual rate of positive matches given and the rate of negative expressiveness was entered as a covariate for the rate of negative matches and the rate of individual negative matches given.

Main effects were found for both age and race in the rate of positive expressiveness ($F(1,172) = 4.15$, $p < .05$, $F(2,172) = 4.32$, $p < .05$) and in the rate of negative expressiveness ($F(1,172) = 4.77$, $p < .05$; $F(2,172) = 3.02$, $p < .05$). Because main effects for race were found, children who were categorized as "Other" were dropped from subsequent analyses due to the small number of participants within that subgroup of the sample ($n = 10$) and the large difference in frequencies from the other two race groups. Univariate Analysis of Variance was also conducted for effects of age, race and gender for the teacher rated affect variables and also presented in Appendix C. Main effects were found for age in teacher rated positive affect ($F(1,167)=4.58$, $p<.05$). No effects were found in teacher rated negative affect.

Correlations were then examined to verify that each of the families of expressiveness variables (positive and negative) were strongly associated with one another and to see whether there were any cross-correlations between the two expressiveness groups. Positive correlations were found between all measures of positive expressiveness, as well as all measures of negative expressiveness (Table 2).

Table 2

Correlations for Variables of Emotional Expressiveness for the Whole Sample (N=173)

	Rate Pos	Rate Pos Match	Rate Child Pos Match	Rate Neg	Rate Neg Match	Rate Child Neg Match
Rate Pos	1					
Rate Pos Match	.80**	1				
Rate Child Pos Match	.72**	.91**	1			
Rate Neg	-.02	-.03	-.08	1		
Rate Neg Match	-.09	-.07	-.10	.84**	1	

Rate Child Neg Match	-.01	-.01	-.01	.64**	.79**	1

**$p<.01$, *$p<.05$

The absence of significant associations between any of the positive and negative expressiveness variables implies that the presence of positive expressiveness in preschool children does not necessary indicate the absence of negative expressiveness and vice-versa. Therefore, both positive and negative expressiveness variables were each expected to provide unique meaning in their associations with social competence variables in subsequent analyses.

Next, correlations for age and race groups were then further examined to test whether the relationships between the three measures of positive expressiveness and negative expressiveness varied within subgroups (age, race). Correlations of the six expressiveness variables for older (n = 74) and younger (n = 99) children are presented in Table 3. Correlations for the six expressiveness variables for European-American (n = 110) and African American (n = 63) children are presented in Table 4.

Table 3

Correlations for Positive and Negative Expressiveness Variables by Age

Younger (n=99) / **Older (n=74)**	Rate Pos	Rate Match Pos	Rate Child Pos Match	Rate Neg	Rate Match Neg	Rate Child Neg Match
Rate Pos	1	.69**	.61**	-.21*	-.20*	-.15
Rate Match Pos	.87**	1	.88**	-.35**	-.23*	-.20
Rate Child Pos Match	.80**	.92**	1	-.38**	-.23*	-.21
Rate Neg	-.13	-.03	-.08	1	.82**	.65**
Rate Match Neg	-.15	-.08	-.10	.85**	1	.86**
Rate Child Neg Match	-.01	-.02	-.04	.63**	.74**	1

**$p<.01$, *$p<.05$

Table 4

Correlations for Positive and Negative Expressiveness Variables by Race

European American (n=110)	**African American (n=63)**	Rate Pos	Rate Match Pos	Rate Child Pos Match	Rate Neg	Rate Match Neg	Rate Child Neg Match
Rate Pos		1	.76**	.73**	-.01	-.11	-.03
Rate Match Pos		.81**	1	.95**	-.02	-.07	.03
Rate Child Pos Match		.71**	.89**	1	-.07	-.10	.02
Rate Neg		.02	.00	-.06	1	.80**	.54**
Rate Match Neg		-.03	-.04	-.06	.87**	1	.69**
Rate Child Neg Match		.02	-.02	.00	.71**	.88**	1

**$p<.01$, *$p<.05$

Patterns of correlations for the younger age group were similar to those for the full sample, but the older age group revealed some significant associations between the variables for negative expressiveness and variables for positive expressiveness.

Associations were found between the rate of positive expressiveness and both the rate of negative expressiveness and the rate of negative matches. Correlations were also found between the rate of positive matches and the rate of negative matches, the rate of positive matches and the rate of negative matches given by an individual participant, the rate of negative expressiveness and the rate of positive matches given by an individual participant, and the rate of negative matches and the rate of positive matches given by a participant.

For European Americans, correlations were found within the groups of variables for the rates of positive expressiveness and within the variables for the rates of negative expressiveness. For African Americans, associations were also found within the groups of variables for the rates of positive expressiveness and within the variables for the rates of negative expressiveness.

The difference between each correlation for older and younger children and each correlation for European American and African American children was calculated and transformed into a z-score. The significant value of each pair of correlations was then determined by incorporating the number of participants into the analysis.

After testing for significance in the differences of the correlations, only two correlations differed significantly between the younger and older groups: the rate of negative expressiveness with the rate of positive matches ($r1 = -.35$, $r2 = -.03$, $z = 2.14$, $p < .05$) and the rate of negative expressiveness with the rate of positive matches given by an individual participant ($r1 = -.38$, $r2 = -.08$, $z = 2.04$, $p < .05$). There were no significant differences in the correlations of affect variables found for the two race

groups, implying that patterns of associations for emotional expressiveness are similar for European American and African American children.

Because there were only two out of thirty correlations with significant differences for the age and race groups, these findings are more than likely a chance finding suggesting there are no real differences between groups for rates of positive and negative expressiveness.

Research Question 2: Do observed differences in children's expression of positive and negative affect show significant associations with teacher rated affect?

A set of analyses was performed to compare observed rates of emotional expressiveness and teacher rated emotional expressiveness. Correlations between observed positive and negative expressiveness and teacher rated positive and negative expressiveness are presented in table 5.

Table 5

Correlational Analyses of Positive and Negative Rate of Expressiveness and Teacher Rated Measures of Affect for All Participants

	Rate of positive expressiveness	Rate of negative expressiveness	Teacher Rated Positive Expressiveness
Rate of Positive Expressiveness (n=173)			
Rate of Negative Expressiveness (n=173)	-.02		
Teacher Rated Positive Affect (n=169)	.17*	.00	

Teacher Rated Negative Affect (n=169)	-.03	-.15	-.47**

*$P<.05$, **$P<.01$

As seen in the table, the associations between observed expression of affect and teacher rated expression of affect were modest indicating that the two sets of variables may relate differently to measures of social competence. Therefore, each set of variables was then examined as correlates of children's social competence in subsequent analyses.

Research Question 3: Do individual differences in children's observed and/or rated expressed affect show interpretable patterns of relations to measures of social competence derived from direct observation and sociometric interviews and/or teacher's ratings of social behavior and temperament relevant to social competence?

This portion of the analyses of the emotional expressiveness variables first examined the relations between the observed and teacher rated affect variables and both observational measures (Q-sorts, Interaction, and Visual Regard) and sociometric measures (nominations, ratings, and paired comparisons) of social competence. Social competence is a multi-faceted construct and indicators need to cover a large base of behavior, affect, cognition, and their integration. As a result, seven measures were taken from the data collected: positive nominations, paired-comparisons sociometric acceptance scores, two Q sort scores for social competence (the California Child Q Set (Block & Block, 1980) and the Baumrind Preschool Q-Sort (Baumrind, 1967)), visual attention received from peers, initiated positive interactions, and initiated neutral interactions. The variables were then standardized within each classroom for which data

was available. The number of participants in this study for which data were available are presented in Table 6.

Table 6

Number of Participants in Which Data for Indicators of Social Competence Were Available

	N
Positive Peer Nominations	169
Paired comparisons	170
California Child Q-Sort	163
Baumrind Preschool Q-sort	156
Visual Attention Received	170
Initiated Positive Interactions	170
Initiated Neutral Interactions	170

Correlations were conducted to determine if there were associations for indicators of social competence and observed and teacher rated emotional expressiveness and are presented in Table 7.

Table 7

Correlational Analyses of Positive and Negative Rate of Expressiveness and Indicators of Social Competence for all Participants (Ns for analyses range from 154 to 170)

	Observed Positive Expressiveness	Teacher Rated Positive Expressiveness	Observed Negative Expressiveness	Teacher Rated Negative Expressiveness
Positive Peer Nominations	.17*	.15	-.16*	-.01
Paired Comparisons	.24**	.17*	-.25**	.00
California Child Q-Sort	.06	.32**	-.13	-.35**
Baumrind Preschool Q-sort	.08	.26**	.06	-.32**
Visual Attention Received	.05	.15*	-.07	-.33**
Initiated Positive Interactions	-.05	.05	-.19*	-.26**
Initiated Neutral Interactions	.23**	.22**	-.03	-.20**

*$P<.05$, **$P<.01$

In contrast to observed positive emotional expressiveness, teacher rated positive emotional expressiveness revealed significant associations with both Q-sort measures and

the amount of visual attention received. Similarly, as opposed to observed negative expressiveness, teacher rated negative emotional expressiveness showed significant relationships with both Q-sort measures, the amount of visual attention received, and initiated neutral interactions. Therefore, it appears as though associations between emotional expressiveness and measures of social competence are somewhat different for observational measures of emotional expressiveness and teacher rated measures of emotional expressiveness.

Correlations for the observed affect variables were then computed for the two age groups (older and younger) and the two race groups (European American, African American) and are presented in Appendix D. Differences in the correlations for the age and race groups were tested in order to see if there were any significant differences in correlations for each group and are also presented in Appendix D. For age, significant differences were found between older and younger children for correlations of negative expressiveness and initiated positive interactions ($r1$ = -.26, $r2$ = .08, z = -2.29, $p < .05$), negative expressiveness and initiated neutral interactions($r1$ = -.27, $r2$ = .14, z = -2.98, $p < .01$), and negative expressiveness and visual attention received from peers ($r1$ = -.16, $r2$ = .19, z = -2.04, $p < .05$). These findings suggest that as children get older, children who show more negative expressiveness initiate fewer positive and neutral interactions with peers and receive less visual attention from their peers. No significant age differences were found in any of the positive expressiveness and social competence correlations. There were no significant differences found between European American and African American children for the expressiveness and social competence correlations. Because only three out of the twenty-eight correlations between rates of

expressiveness and social competence revealed age effects, and no race effects were found, using a pooled sample of all participants would be a more accurate analysis strategy than breaking down into groups.

Age differences and race differences were also tested for correlations between teacher rated emotional expressiveness and measures of social competence and are presented in Appendix D. No age differences were found for teacher rated positive expressiveness or for teacher rated negative expressiveness. Race differences were found for teacher rated positive expressiveness and paired comparisons ($r1$ = -.06, $r2$ = .27, z = 2.06, $p < .05$) and teacher rated positive expressiveness and initiated positive interactions ($r1$ = -.17, $r2$ = .19, z = 2.24, $p < .05$). No race differences were found for teacher rated negative expressiveness. Because only two of the twenty-eight correlations revealed age or race effects, it seems that while patterns of associations between observed emotional expressiveness and social competence and teacher rated emotional expressiveness and social competence are different, the lack of substantial race and age effects for both sets of correlations remains the same.

Regression Analyses

Regression analyses were then performed to examine the unique contributions of both observed emotional expressiveness variables and teacher rated affect variables. As shown in Table 8, both observed positive expressiveness (b = .21, $p < .01$) and observed negative expressiveness (b = -.24, $p < .01$) were uniquely associated with paired comparisons. Children observed as showing more positive affect and less negative affect were chosen over other children more frequently by their peers. For the California Child Q-Sort, associations were found for observed negative expressiveness (b = -.17, $p < .05$),

teacher rated positive affect (b = .17, p < .05), and teacher rated negative affect (b = -.29, p < .01). For the Baumrind Child Q-Sort, a unique association was found for teacher rated negative affect (b = -.24, p < .01). Teacher rated negative affect was also uniquely associated with visual attention received (b = -.37, p < .01). Children who are seen by their teachers as showing more negative affect receive less visual attention from their peers. Both observed negative expressiveness (b = -.29, p < .01) and teacher rated negative affect (b = -.36, p < .01) were uniquely associated with initiated positive interactions. Children observed as showing more negative expressiveness and also seen by their teachers as showing more negative affect are less likely to initiate positive interactions with other children. Observed positive expressiveness (b = .23, p < .01) was uniquely associated with initiated neutral interactions. Children showing more positive expressiveness are more likely to initiate neutral interactions with their peers.

Table 8

Regression Analyses of Outcome Variables for Social Competence with Emotional Expressiveness and Teacher Rated Affect as Predictors

DEPENDENT	RTEPOS	RTENEG	Teacher Rated Positive Affect	Teacher Rated Negative Affect		
	b	*b*	*b*	*b*	R^2	*F*
Positive Peer Nominations (n=169)	.14	-.15	.14	.04	.07	2.91*
Paired Comparisons (n=170)	.21**	-.24**	.16	.04	.14	6.42**
California Child Q-Sort (n=163)	.02	-.17*	.17*	-.29**	.18	8.56**
Baumrind Child Q-Sort (n=156)	.05	.03	.14	-.24**	.12	5.12**

Visual Attention Received (n=170)	.04	-.12	-.04	-.37**	.13	5.91**
Initiated Positive Interactions (N=170)	-.03	-.29**	-.13	-.36**	.15	7.36**
Initiated Neutral Interactions (N=170)	.23**	-.06	.11	-.15	.12	5.32**

**$p < .01$, *$p < .05$

The second portion of the analyses of the emotional expressiveness variables examined the relations between the affect variables and teachers' ratings of social behavior and temperament relevant to social competence.

Correlational Analyses

Correlational analyses were conducted to determine if there were associations for the four teacher rated social competence factors and rates of observed emotional expressiveness and are presented in Table 9.

Table 9

Correlational Analyses of positive and negative rate of expressiveness and teacher rated measures of affect and social competence for all participants

	Rate of positive expressiveness	Rate of negative expressiveness
Teacher Rated Positive Affect (n=169)	.17*	.00
Teacher Rated Negative Affect (n=169)	-.03	-.15
Teacher Rated Life Success (n=169)	.37**	-.05
Teacher Rated Dysregulation and Reactivity (n=169)	-.09	.28**

*$p < .05$, **$p < .01$

Significant relationships were found between the rate of positive expressiveness and teacher rated positive affect and life success, and the rate of negative expressiveness and teacher rated dysregulation and reactivity. Children with more positive expressiveness were seen by teachers as showing more positive affect and having more life success. Children showing more negative expressiveness were seen be teachers as less well regulated and more reactive.

Correlations were then computed for the two age groups (older and younger) and the two race groups (European American and African American) and are shown in

Appendix J. Differences in the correlations for the age and race groups were tested for significant differences in correlations for each group and are also presented in Appendix J. For age, no significant differences were found between older and younger children. For race, one significant difference was found between the rate of negative expressiveness and teacher rated positive affect ($r1$=.21, $r2$=-.13, z=2.12, p<.05). Because only one out of the sixteen correlations between rates of expressiveness and teacher rated social competence factors revealed race effects, and no age effects were found, further analyses used a pooled sample of participants rather than groups broken down by age or race. In follow up analyses, both positive and negative were used in regression analyses and in no case did the regression change the interpretation of the variables.

V. DISCUSSION

The purpose of this thesis project was (1) to measure the expression of affect in the context of dyadic peer interaction and to examine whether the expression of affect was associated with sociodemographic status parameters (i.e., age, gender, and race), (2) to determine the degree of overlap between measures of affect expression based on direct observations compared to teacher rated affect, and (3) to investigate relations between individual differences in observed and teacher rated expressiveness and indicators of social competence derived from sociometry and observation. One interesting finding from the primary analyses related to the first research question was that correlations were not found between the two sets of observed positive and negative expressiveness variables. This finding suggests that positive and negative expressiveness are not opposite ends of a spectrum but rather provide unique information about the expressiveness of an individual, although this finding applies only to observed and not to teachers' ratings of affect expression.

Findings show that age and race were associated with mean differences in the rates of expression but these differences did not obscure similar patterns of association among the variables. When pairs of analogous correlations were contrasted for the two groups, only a small handful were found to be significantly different. The fact that correlational patterns did not vary meaningfully over the age and race/ethnicity breakdowns suggests that contextual variables may have shifted the mean scores. For

example, it could be that younger children found the tasks less engaging and the toys were less likely to elicit either positive or negative affects. In selecting the tasks, an attempt has been made to choose stimulus toys that would be appealing to both boys and girls (and we did not find gender differences in expressivity), but age differences had not been expected. Differences across racial/ethnic categories were also unanticipated, but we note that only about 30% of children in most classes were minority status and it could be that affect expression was, in part, influenced by the racial/ethnic similarity of interactive partner. This possibility should be tested in dyadic data. Overall, these findings suggest that individual differences in expressiveness for preschool children are more a reflection of individual characteristics and personality rather than a function of age or ethnicity. This can be seen through the patterns of association both internal to the variable set (i.e. affect with affect) and cross variable sets (i.e., affect with social competence) which yield the same basic findings for all breakdowns of the sample.

Although the data support the interpretation that affect expression has the same meaning across age, the data in Table 3 also hint at the possibility of a developmental shift in the organization of affect expression from a two-process, unipolar dimensionality of affect characterizing the younger children to a single process, bipolar dimensionality characterizing the older children. This is shown by the very low, not significant cross-correlations for positive and negative affect in three year olds and modest significant correlations for the four year olds. A longitudinal study would be necessary to investigate whether the bipolarity of positive and negative expressiveness increases with age. Should these findings be reproduced in a longitudinal sample, it would suggest that affect

undergoes a reorganization over the preschool years and would be an example of the development of affective experience.

Results from the second part of the analyses involving the relationship between observed emotional expressiveness and teacher rated emotional expressiveness showed that the two sets of variables can hardly be considered related. This may be because items included in the teacher scales are not a reflection of the affect observed in dyadic play. For example, teachers' rate negative expressiveness in terms of sadness, fear, shyness, etc. whereas most of the negative affect captured in observation is in terms of anger, irritability, and distress. The weak associations between observed affect and teacher rated affect indicate that the two sets of variables may uniquely predict different measures of social competence, which is what was seen in the following regression analyses with social competence measures as the outcome.

The third part of the analyses found that individual differences in emotional expressiveness (both observed and teacher rated) do, in fact, covary with measures of social competence (i.e. sociometric acceptance, interactions, Q-sorts). Overall, positive affect is a positive predictor and negative affect is a negative predictor. Additionally, teacher rated negative affect was particularly predictive. As shown in the regression analyses, observed emotional expressiveness and teacher rated affect expression predicted different measures of social competence. Both positive and negative expressiveness predicted the sociometric measure of paired comparisons. Children exhibiting more positive affect in dyadic peer play were picked more often by their peers and children showing more negative affect were picked less frequently by their peers. These findings are similar to those found in previous research in which high frequencies

of negative emotional expressiveness were associated with lower levels of peer acceptance and high levels of positive expressiveness were associated with higher peer acceptance ratings (Arsenio & Lover, 1997; Denham, 1998). Observed negative affect, teacher rated positive and teacher rated negative affect all uniquely predicted one of the observational q-sort measures (California Child Q-Sort). Only teacher rated negative affect predicted the other observational q-sort measure (Baumrind Child Q-Sort) and also uniquely predicted the amount of visual attention a child received. Both observed negative affect and teacher rated negative affect predicted the amount of positive interactions initiated by a child. Children observed as showing more negative affect and described by teachers and showing more negative affect initiated fewer positive interactions with their peers. Finally, observed positive emotional expressiveness predicted the amount of neutral interactions initiated by a child. It is important to note here that neutral interactions can be prosocial by nature (e.g. children working together on a puzzle; one child compliments another child) but they are coded as neutral because of the affective displays given by the children. This has also been shown in past research in that positive affect promotes children's social interactions (Sroufe et al., 1984). In sum, these results indicate that the observation of emotional expressiveness in children and teacher rated affect expression may both be valuable and reliable predictors of social competence.

By looking at the associations between the affect expressiveness variables and measures of social competence, it appears as though observed affect and teacher rated affect may be measuring different features of social competence. While the observed expressiveness variables related strongly with popularity measures taken directly from

children in the study, the teacher rated affect variables showed stronger relations with observations of social competence taken from adult observers. It seems as though what is being seen in observations of affect expressiveness relates better to how children view each other and what is being seen by teachers is also what is seen by adult observers. Therefore, observed affect is measuring more of how children view and interact with each other. Teacher rated affect is measuring how adults view children as socially competent. The two measures of affect expressiveness (observed and teacher rated) are picking up different aspects of social competence. Therefore, using both in analyses may present a clearer picture of social competence in preschool children.

Analyses were also conducted to see whether observed emotional expressiveness is associated with scales of teacher ratings of social behavior and temperament related to social competence. Positive expressiveness was positively associated with teacher rated positive affect and teacher rated life success. Children showing more positive affect were also seen by their teachers as showing more positive affect and as being more socially competent (having more life success). Negative expressiveness was positively associated with teacher rated regulation and reactivity. Children showing more negative expressiveness were seen by their teachers as being less well-regulated and highly reactive.

The relations between observed negative expressiveness and the teacher scale for dysregulation and reactivity are not surprising in that what may be seen as observed negative affect also may be considered reactive behavior by teachers. The items listed in the reactivity scale include occurrences that may be picked up in the observation of

negative affect. Whether or not reactive behavior items should be considered as negative affect items is undetermined at this point, but could be explored in future analyses.

These data are consistent with the social psychology approach in that the expression of positive affect seems to promote child well-being, or social competence. According to social (or positive) psychology theory, positive emotions have the ability to change people for the better; to "make them healthier, more socially integrated, knowledgeable, effective, and resilient"(Fredrickson, B.L., 2004). These results indicate that not only does the expression of positive emotions predict social competence via peer ratings, observations, and teacher ratings, but also that the expression of negative affect adversely relates to social competence indicators as well. In sum, experiencing positive affect is healthy and a positive predictor of well-being and negative expressiveness predict less optimal outcomes.

The data from this study also complement Denham's model of emotional and social competence insofar as the expression of affect does predict social competence indicators. However, Denham's model places emotion as an antecedent to social competence. The order or direction of affect is not really possible to test in these data, but using a longitudinal sample would help us see whether emotional competence and its component parts (e.g., emotional expressiveness) are antecedents to social competence or just concomitants.

One issue to point out that was discovered in this study is the curious finding regarding the teacher rated scales of reactivity and regulation (dysregulation). Teachers do not seem to see a distinction between these constructs. Highly reactive children were characterized as being poorly regulated and difficult to control. However, theoretically

these two are seen as distinct constructs referring to different domains of functioning. But by looking at these data and the extremely high correlations between regulation and reactivity, it is not clear that they should be treated as different constructs.

Future Directions

A longitudinal investigation would be useful and justified by these data to test the stability of expressivity and to test Denham's model with time-directed data. Testing Denham's model would examine how much of an increment in social competence is found when including affect along with initial social competence indicators. This longitudinal prediction of social competence would also test positive psychology theory by determining if emotional expression predicts social competence and well being over time. Another possible direction would be to examine the relationships between emotional expression and emotion understanding and regulation. Would expressiveness be an antecedent to understanding and/or regulation? Does expression of positive affect predict better regulation in subsequent years? These questions could be tested and explored through a longitudinal study.

Limitations

One limitation of these data was the lack of participants who were in the "Other" ethnic group, being neither European American nor African American. A larger study could perhaps provide a more substantial number of children for this group so that race effects could also be examined for children following outside of the other two categories. Furthermore, more specific and accurate categories could be created for children who were neither European American nor African American if there were a larger sample.

Conclusion

Children come to experience affects/emotions in different ways. Both in the home (parent-child relationships, attachment) and in the daycare/preschool environment, children are exposed to different settings for affective experience. Individual differences in the expression of affect are both a reflection of these experiences and of developmental capabilities. Though the experience of affect has received less attention in past years than has emotion knowledge or emotion regulation, these data suggest that affect is an important component of the social life of preschool children. In conclusion, it can be inferred from this study that levels of both positive and negative emotional expressiveness have predictive ability for social competence in preschool children, thereby providing a direct measurement of social competence which may present to be a highly effective tool.

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APPENDIX A: FACTOR STRUCTURES AND ITEM DESCRIPTIONS FOR TEACHER RATED POSITIVE AFFECT, NEGATIVE AFFECT, LIFE SUCCESS, AND DYSREGULATION AND REACTIVITY

Teacher Rated Items Used to Create Scale Scores

Domain	Item	Source	Mean	SD
Reactivity (α = .92)	How many times per day, on average, does this child get fussy or irritable?	ChCQ	2.0	0.71
	How much does this child cry and fuss in general?	ChCQ	2.8	1.4
	How easily does this child get upset?	ChCQ	3.7	1.4
	Easily Frustrated	SCBE	2.6	1.3
	Irritable, gets mad easily	SCBE	2.6	1.3
	Screams or yells easily	SCBE	2.6	1.3
	Hits, bites, or kicks other children	SCBE	2.0	1.1
	Always argues	ICS	3.9	1.6
	This child disrupts the group by inappropriate or attention-getting behavior.	TRSS	2.3	1.1
Regulation (α = .93)	How difficult is it to calm/soothe this child when he/she is upset.	ChCQ	3.1	1.5
	When upset, how vigorously or loudly does he/she cry and fuss	ChCQ	3.3	1.6
	How changeable is this child's mood?	ChCQ	3.4	1.4
	How does this child respond to disruptions and changes in the everyday routine?	ChCQ	2.8	1.1

Appendix continuation
Teacher Rated Items

	Does this child persist in playing with objects when she/he is told to leave them alone?	ChCQ	3.5	1.7
	Does this child continue to go someplace even when told something like "stop," "come here" or "no?"	ChCQ	3.3	1.7
	When removed from something he/she is interested in but should not be getting into, does this child get upset?	ChCQ	3.7	1.5
	Hits or destroys things when angry with you	SCBE	1.4	0.96
	Accepts compromises when reasons are given (reversed)	SCBE	2.8	1.1
	Defiant when reprimanded	SCBE	2.1	1.1
	Refrains from over-impulsive responding (reversed)	TRSS	2.8	1.0
Positive Affect ($\alpha = .84$)	How much does this child smile and make happy sounds?	ChCQ	5.0	1.2
	What kind of mood is this child generally in?	ChCQ	5.4	1.0
	How excited does this child become when people play with or talk to him/her?	ChCQ	5.1	1.1
	Maintains neutral facial expression (doesn't smile or laugh)	SCBE	4.6	0.9
	Always Smiles	ICS	5.1	1.2
Negative Affect ($\alpha = .81$)	Worries	SCBE	2.3	0.92
	Timid, afraid	SCBE	2.4	1.1
	Sad, unhappy, or depressed	SCBE	1.9	0.80
	Very shy	ICS	3.4	1.6
	Always sad	ICS	3.1	1.0
	Always worries	ICS	3.4	1.1
Life Success ($\alpha = .87$)	Takes pleasure in own accomplishments	SCBE	5.0	0.90
	Very popular with boys	ICS	4.3	0.63
	Very popular with girls	ICS	5.0	1.3
	Good letter and word knowledge	ICS	4.6	1.8
	Good number knowledge	ICS	4.8	1.7
	Has lots of friends	ICS	5.1	1.2
	Always gets his/her way	ICS	4.6	1.0
	This child gets along well with peers of the same sex	TRSS	4.3	0.63
	This child gets along well with peers of the opposite sex	TRSS	3.9	0.74

	Other children like this child and seek him/her out for play	TRSS	3.7	0.90
	The child is accepted by the peer group	TRSS	4.1	0.70

APPENDIX B: DESCRIPTIVE STATISITCS FOR EMOTIONAL EXPRESSIVENESS VARIABLES

Table 1. Means and standard deviations for emotional expressiveness for whole sample.

	Whole Sample	
	Mean	SD
Rate Positive	.28	.12
Rate of Positive Matches	.13	.09
Rate Of Positive Matches Given By Child	.06	.05
Rate Negative	.04	.04
Rate of Negative Matches	.01	.02
Rate of Negative Matches Given By Child	.01	.01

Table 2. Means and standard deviations for emotional expressiveness for age groups.

	Mean		SD	
	Young	Old	Young	Old
Rate Positive	.24	.51	.11	.33
Rate of Positive Matches	.10	.52	.07	.16
Rate Of Positive Matches Given By Child	.05	.28	.04	.08
Rate Negative	.02	.23	.03	.05
Rate of Negative Matches	.01	.11	.01	.01
Rate of Negative Matches Given By Child	.00	.04	.01	.01

Table 3. Means and standard deviations for emotional expressiveness for gender groups.

	Mean		SD	
	Male	Female	Male	Female
Rate Positive	.27	.28	.13	.12
Rate of Positive Matches	.12	.13	.10	.09
Rate Of Positive Matches Given By Child	.06	.07	.05	.05
Rate Negative	.04	.03	.04	.04
Rate of Negative Matches	.01	.01	.02	.01
Rate of Negative Matches Given By Child	.01	.00	.01	.01

Table 4. Means and standard deviations for emotional expressiveness for race groups.

	Mean			SD		
	EA	AA	O	EA	AA	O
Rate Positive	.30	.24	.29	.13	.11	.08
Rate of Positive Matches	.14	.10	.12	.09	.09	.05
Rate Of Positive Matches Given By Child	.07	.05	.06	.05	.05	.04
Rate Negative	.03	.04	.02	.03	.04	.02
Rate of Negative Matches	.01	.01	.00	.01	.02	.01
Rate of Negative Matches Given By Child	.01	.01	.00	.01	.01	.01

APPENDIX C: UNIVARIATE ANALYSES OF VARIANCE OF EMOTIONAL EXPRESSIVENESS VARIABLES

Analysis of Variance for rate of positive expressiveness (RTE POS).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.05	1	.05	4.15*
Sex	.01	1	.01	.46
Race	.11	2	.05	4.32*
Age*Gender	.02	1	.02	1.67
Age*Race	.03	2	.01	.99
Gender*Race	.00	2	.00	.01
Age*Gender*Race	.01	2	.01	.51
Error		171	.01	

**p<.01,*p<.05

Analysis of variance for rate of positive matches (RTE MATCH POS).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.00	1	.00	.00
Sex	.00	1	.00	.87
Race	.01	2	.00	.79
Age*Gender	.01	1	.01	.41
Age*Race	.00	2	.00	.23
Gender*Race	.00	2	.00	.26
Age*Gender*Race	.01	2	.01	1.34
Rate of Pos Exp	.83	1	.83	246.58
Error	.58	170	.00	

**$p<.01$,*$p<.05$

Analysts of variance for rate of positive matches given by individual participant (RTE CHILD MATCH POS).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.00	1	.00	.01
Sex	.00	1	.00	.36
Race	.00	2	.00	.22
Age*Gender	.00	1	.00	.20
Age*Race	.00	2	.00	.12
Gender*Race	.00	2	.00	.35
Age*Gender*Race	.00	2	.00	1.30
Rate of Pos Exp	.19	1	.19	151.59
Error	.22	170	.00	

**$p<.01$,*$p<.05$

Analysis of variance for rate of negative expressiveness (RTE NEG).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.01	1	.01	4.77*
Sex	.00	1	.00	1.54
Race	.01	2	.00	3.02*
Age*Gender	.00	1	.00	.00
Age*Race	.00	2	.00	.71
Gender*Race	.00	2	.00	.13
Age*Gender*Race	.00	2	.00	.18
Error	.25	171	.00	

**$p<.01$,*$p<.05$

Analysis of variance for rate of negative matches (RTE MATCH NEG).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.00	1	.00	2.24
Sex	.00	1	.00	1.24
Race	.00	2	.00	.22
Age*Gender	.00	1	.00	.04
Age*Race	.00	2	.00	.32
Gender*Race	.00	2	.00	.79
Age*Gender*Race	.00	2	.00	.29
Rate of Neg Exp	.03	1	.03	389.52
Error	.01	170	.00	

**$p<.01$,*$p<.05$

Analysis of variance for rate of negative matches given by the Individual participant (RTE CHILD MATCH NEG).

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.00	1	.00	.71
Sex	.00	1	.00	2.31
Race	.00	2	.00	.66
Age*Gender	.00	1	.00	.37
Age*Race	.00	2	.00	.66
Gender*Race	.00	2	.00	.60
Age*Gender*Race	.00	2	.00	.88
Rate of Neg Exp	.01	1	.01	121.69
Error	.01	170	.00	

**$p<.01$,*$p<.05$

Analysis of variance for teacher rated positive affect.

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	1.01	1	1.02	4.58*
Sex	.01	1	.01	.03
Race	.38	2	.19	.86
Age*Gender	.05	1	.05	.24
Age*Race	.55	2	.27	1.23
Gender*Race	.68	2	.34	1 .53
Age*Gender*Race	.22	1	.22	.98
Error	37.10	170	.22	

**$p<.01$,*$p<.05$

Analysis of variance for teacher rated negative affect.

Source	Sum of Squares	df	Mean-Square	F-ratio
Age	.00	1	.00	.00
Sex	.38	1	.39	.90
Race	.15	2	.07	.17
Age*Gender	.11	1	.11	.26
Age*Race	.76	2	.38	.88
Gender*Race	.84	2	.42	.97
Age*Gender*Race	.47	1	.47	1.09
Error	71.99	167	.43	

**$p<.01$,*$p<.05$

APPENDIX D: CORRELATIONS OF SOCIAL COMPETENCE VARIABLES

Correlations for rate of expressiveness and variables of social competence for different race groups.

	N		Rate of Positive Expressiveness		Rate of Negative Expressiveness	
	EA	AA	EA	AA	EA	AA
ZPOSAVG	107	62	.17	-.02	-.17	-.06
ZPAIRAVG	108	62	.20*	.12	-.21*	-.25*
ZPSOC10	105	58	.09	-.03	-.13	-.11
ZPSOC72	100	56	.15	-.05	-.04	.20
ZRTERECV	108	62	.09	.03	-.18	.05
ZRTEGIV1	108	62	.01	-.16	-.20*	-.22
ZRTEGIV2	108	62	.26**	.16	-.07	.06

**P<.05, **P<.01*

Race Differences in correlations for indicators of social competence and positive and negative expressiveness.

	EA N	AA N	Race Difference in RTE POS	Race Difference in RTE NEG
ZPOSAVG	107	62	.19	.11
ZPAIRAVG	108	62	.18	.04
ZPSOC10	105	58	.11	.02
ZPSOC72	100	56	.20	.16
ZRTERECV	108	62	.06	.23
ZRTEGIV1	108	62	.17	.02
ZRTEGIV2	108	62	.10	.13

Correlations for rate of expressiveness and variables of social competence for older and younger groups.

	N		Rate of Positive Expressiveness		Rate of Negative Expressiveness	
	Older	Young	Older	Young	Older	Young
ZPOSAVG	72	97	.26*	.12	-.21	-.16
ZPAIRAVG	72	98	.27*	.25*	-.37**	-.17
ZPSOC10	72	91	.10	.07	-.17	-.06
ZPSOC72	69	87	.08	.10	.09	.06
ZRTERECV	72	98	.17	.03	-.16	.19
ZRTEGIV1	72	98	.24*	-.05	-.26*	.08
ZRTEGIV2	72	98	.12	.18	-.27*	.14

**P<.05, **P<.01*

Age Differences in correlations for indicators of social competence and positive and negative expressiveness.

	Older N	Younger N	Age Difference in RTE POS	Age Difference in RTE NEG
ZPOSAVG	72	97	.14	.05
ZPAIRAVG	72	98	.02	.20
ZPSOC10	72	91	.03	.11
ZPSOC72	69	87	.02	.03
ZRTERECV	72	98	.14	.35*
ZRTEGIV1	72	98	.29	.34*
ZRTEGIV2	72	98	.06	.41*

***p<.01, *p<.05*

Correlations for rate of expressiveness and variables of social competence for older and younger groups.

	Observed Positive Expressiveness		Teacher Rated Positive Expressiveness		Observed Negative Expressiveness		Teacher Rated Negative Expressiveness	
	Older	Young	Older	Young	Older	Young	Older	Young
ZPOSAVG	.26*	.12	.20	.11	-.21	-.16	-.01	-.01
ZPAIRAVG	.27*	.25*	.16	.20*	-.37**	-.17	.01	-.01
ZPSOC10	.09	.07	.38**	.32**	-.17	-.06	-.38**	-.35**
ZPSOC72	.08	.10	.32**	.25*	.09	.06	-.34**	-.31**
ZRTERECV	.17	.03	.26*	.15	-.16	.19	-.31**	-.40**
ZRTEGIV1	.24**	-.05	.29*	.08	-.26*	.08	-.28*	-.36**
ZRTEGIV2	.12	.18	.20	.09	-.27*	.14	-.23	-.11

***P<.01, *P<.05*

Age Differences in correlations for indicators of social competence and teacher rated positive and negative expressiveness.

	Older N	Younger N	Age Difference in Teacher Rated Positive Affect	Age Difference in Teacher Rated Negative Affect
ZPOSAVG	72	97	.09	.05
ZPAIRAVG	72	98	.04	.20
ZPSOC10	72	91	.06	.11
ZPSOC72	69	87	.11	.03
ZRTERECV	72	98	.14	.05
ZRTEGIV1	72	98	.21	.06
ZRTEGIV2	72	98	.11	.12

***p<.01, *p<.05*

Correlations for rate of expressiveness and variables of social competence for African American and European American groups.

	Observed Positive Expressiveness		Teacher Rated Positive Expressiveness		Observed Negative Expressiveness		Teacher Rated Negative Expressiveness	
	AA	EA	AA	EA	AA	EA	AA	EA
ZPOSAVG	-.02	.17	.07	.13	-.06	-.17	-.11	.05
ZPAIRAVG	.12	.20*	-.06	.27**	-.25*	-.21*	.01	.01
ZPSOC10	-.03	.09	.23	.37**	-.11	-.13	-.39**	-.33**
ZPSOC72	-.05	.15	.21	.32**	.20	-.04	-.38**	-.29**
ZRTERECV	.03	.09	.02	.26**	.05	-.18	-.35**	-.34**
ZRTEGIV1	-.16	.01	-.17	.19*	-.22	-.20*	-.24	-.27**
ZRTEGIV2	.16	.26**	.21	.23*	.06	-.07	-.15	-.22

*P<.05, **P<.01*

Race Differences in correlations for indicators of social competence and positive and negative expressiveness.

	AA N	EA N	Race Difference in Teacher Rated Positive Affect	Race Difference in Teacher Rated Negative Affect
ZPOSAVG	62	105	.06	.16
ZPAIRAVG	62	105	.33*	.00
ZPSOC10	58	103	.14	.06
ZPSOC72	56	98	.11	.09
ZRTERECV	63	106	.24	.01
ZRTEGIV1	63	106	.36*	.03
ZRTEGIV2	63	106	.02	.07

**$p<.01$, *$p<.05$

APPENDIX E: STANDARDIZED PRINCIPAL COMPONENTS ANALYSES FOR WHOLE SAMPLE

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
BATES CHILD CHARACTERISTICS QUESTIONNAIRE: WHOLE SAMPLE

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)	(6)
(1)	**Persistent, Difficult, Attention-getting Behaviors (18.37% of variance)**						
28	Child persists in playing with objects when told to leave them alone	**.83**	-.02	.18	.27	.13	.10
29	Child continues to go someplace when told to stop	**.82**	-.03	.20	.26	.18	.05
32	Child presents difficulty to the average preschool teacher	**.74**	.14	.20	.45	.06	-.07
30	Child gets upset when removed from something of interest	**.71**	.13	.11	.45	.12	.12
15	Child is typically very active and vigorous	**.70**	-.26	-.07	.10	.14	.10
27	It is difficult to take child places	**.67**	.31	.22	.31	.21	-.08
31	Child is persistent in trying to get attention when adult is busy	**.65**	.01	-.30	.32	-.07	.05
25	Child does not like being confined	**.62**	.26	-.17	.16	-.15	.25
23	Child requires much attention for routine caregiving (e.g. meals)	**.58**	.25	-.07	.35	.02	-.33
24	Child does not play well by himself/herself	**.56**	.20	-.01	.17	-.04	-.25
(2)	**Negative response to novelty/ Unadaptable/Serious mood (16.13% of variance)**						
9	Child typically responds fearfully to a new person	.01	**.82**	.17	.13	.07	.08
11	Child does not adapt well to new experiences	.15	**.82**	.05	.15	.17	-.03
10	Child responds fearfully to being in a new place	.09	**.78**	.14	.14	.17	-.10
7	Child usually responds negatively to new playthings	.06	**.70**	.11	.25	.08	.08
20	Child typically responds unfavorably to disruptions in the everyday routine (e.g. field trips, class visitor)	.30	**.65**	.08	.32	.14	.02

8	Child typically responds negatively to new food	.01	**.63**	-.08	.07	.14	.14
16	Child does not smile or make happy sounds very often	.03	**.55**	.57	.22	-.13	-.20
17	Child is generally in a serious mood	.05	**.53**	.52	.36	-.07	-.16
(3)	**Unfriendly and Unaffectionate (8.90% of variance)**						
26	Child seldom likes to cuddle and snuggle when held	.13	.07	**.76**	-.04	.10	.24
18	Child does not like playing with teacher very much	.06	.28	**.73**	.01	-.07	-.05
19	Child does not wish to be held most of the time	.01	-.28	**.62**	-.01	.15	.29
22	Child is not excited when people come talk to him/her	-.20	.43	**.53**	.10	-.06	-.24
(4)	**Easily upset/Unable to regulate emotions (15.28% of variance)**						
12	Child is very easily upset	.32	.21	-.04	**.80**	.01	.02
6	Child cries and fusses more than the average child	.39	.19	.01	**.79**	.05	-.05
1	Child is difficult to calm or soothe when he/she is upset	.24	.25	.15	**.76**	.17	.04
13	Child cries loudly and vigorously when upset	.40	.12	.00	**.73**	.09	.08
5	Child gets fussy or irritable often throughout the day	.36	.15	.02	**.69**	.12	-.02
21	Child's mood changes often and rapidly	.44	.32	-.01	**.65**	.02	.01
(5)	**Inconsistent routines (4.85% of variance)**						
3	Child is very inconsistent with his/her eating routine	.00	.34	.01	.19	**.75**	-.06
2	Child is very inconsistent with his/her sleeping routine	.27	.24	.01	.13	**.72**	-.04
(6)	**Does not like to be dressed (3.62% of variance)**						
14	Child does not like to be dressed	.06	.14	.12	.08	-.09	**.74**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
INTERPERSONALCOMPETENCE SCALE: WHOLE SAMPLE

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)
(1)	**Internalizing Negative Affect (10.86% of variance)**					
15	Never worries	**.79**	.13	-.04	.14	.08
10	Never sad	**.75**	-.19	.12	.34	.02
18	Never cries	**.59**	-.52	.04	-.09	.26
(2)	**Avoids Conflict (16.33% of variance)**					
2	Never gets in trouble at school	-.03	**.82**	-.18	-.09	.02
9	Never gets in a fight	-.10	**.81**	-.12	-.26	.14
1	Never argues	-.14	**.80**	.01	-.23	.18
5	Very Shy	.31	**.60**	.16	.26	.15
(3)	**High Academic Skills (11.52% of variance)**					
11	Very good number knowledge	.01	-.10	**.91**	.09	.12
8	Very good letter and word knowledge	.03	-.10	**.90**	.15	.13
(4)	**Unpopular and Unfriendly (15.48% of variance)**					
3	Never smiles	.30	.14	.10	**.79**	.02
17	Never friendly	.34	-.23	.00	**.71**	.03
12	Not popular with girls	-.05	-.19	.25	**.68**	.36
13	No friends	.06	-.08	.21	**.64**	.58
7	Not good looking	-.01	-.18	-.01	**.51**	.33
(5)	**Not athletic and Unpopular with Boys (13.86% of variance)**					
6	Not good at sports	-.05	.16	-.05	.10	**.75**
16	Never wins	.20	.15	.29	.10	**.72**
4	Not popular with boys	.10	.01	.07	.38	**.65**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
THE SOCIAL COMPENTENCE AND BEHAVIOR EVALUATION SCALE (PSP)-34
YEAR

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)
(1)	**Externalizing Behavior Problems (24.45% of variance)**					
5	The child is irritable and gets mad easily	**.87**	.01	.11	.18	.02
4	The child gets angry when he/she is interrupted	**.85**	-.04	.07	.20	-.05
10	The child screams or yells easily	**.83**	-.09	.12	.11	-.14
18	Tend to get into conflicts with other children	**.81**	-.19	.22	.01	-.12
29	Is defiant when reprimanded	**.79**	.06	.17	-.12	.21
16	The child often hits, bites, or kicks other children	**.76**	-.06	.30	-.07	.06
28	Usually opposes others suggestions	**.74**	.06	.14	-.11	.23
11	Often forces other children to do things they don't want to do	**.72**	-.22	.10	.03	-.19
3	Is easily frustrated	**.72**	.04	.14	.42	.06
25	Hits or destroys things when angry	**.63**	.15	.13	-.18	.38
27	Does not accept compromise	**.63**	.02	.44	.02	.22
(2)	**Unpopular and Inactive (12.24% of variance explained)**					
23	Often goes unnoticed in a group	-.27	**.73**	.06	.12	.02
21	Does not talk or interact with peers during group activities	-.03	**.72**	.12	-.03	.04
14	Often remains apart, isolated from the group	.04	**.71**	.08	.36	.16
12	Usually remains inactive just watching other children play	-.10	**.71**	.09	.33	.26
1	Generally maintains a neutral facial expression (e.g. does not smile or laugh)	.08	**.66**	.17	.04	-.21
9	Is inhibited or uneasy in a group	-.05	**.61**	.19	.46	.04
(3)	**Low Social Cognitive Skills (13.98% of variance explained)**					
15	Does not takes other's point of view into account	-.28	-.05	**.76**	.01	.09
19	Does not comfort or assist another child in difficulty	-.19	-.21	**.73**	-.06	.17
13	Does not negotiate solutions to conflicts with others	-.01	-.26	**.69**	.09	-.07

22	Is inattentive towards younger children	-.03	-.08	**.64**	-.12	.08
24	Does not work easily in a group	-.39	-.13	**.62**	-.16	-.26
26	Does not help with everyday tasks	-.16	-.14	**.62**	.10	-.39
17	Does not cooperate with other children	-.46	.12	**.59**	-.14	.00
20	Never takes care of toys	-.46	.12	**.55**	.00	-.20
(4)	**Sad and Worries**					
	(8.09% of variance explained)					
6	Child worries a lot	.13	.17	-.06	**.77**	.02
8	Child seems sad, unhappy, or depressed	.21	.33	.13	**.64**	.07
7	Usually avoids new situations	-.23	.52	.03	**.59**	.06
(5)	**Tired**					
	(4.18% of variance explained)					
2	Child is often tired	.05	.08	.03	.45	**.61**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
SOCIAL BEHAVIOR SCALE: WHOLE SAMPLE

	Factor Name and Item Description	(1)
(1)	**Externalizing Behavior Problems (78.63% of variance explained)**	
7	Says unpleasant or mean things to other children	**.92**
2	Strikes back with angry behavior in response to other children's teasing	**.91**
1	Disturbs other children (e.g. teases, provokes fights)	**.90**
3	Argues and always has to have the last word	**.88**
6	Speaks to others in an impatient tone	**.88**
5	Uses coercive tactics to force submission of peers	**.87**
4	Displays physical aggression towards objects or persons	**.86**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
TEACHER RATING SCALE OF SOCIAL SKILL: WHOLE SAMPLE

	Factor Name and Item Description	(1)	(2)	(3)
(1)	**High Social-Cognitive Skills (30.26% of variance)**			
13	Accurately interprets what a peer is trying to do	**.87**	.04	.19
12	Is socially aware of situation	**.86**	.06	.31
15	Generates many solutions to interpersonal problems	**.86**	.15	.22
16	Generates good quality solutions to interpersonal problems	**.85**	.18	.27
17	Is aware of the effects of his/her behavior on others	**.83**	.17	.24
11	Understands other's feelings	**.81**	.18	.31
14	Refrains from over-impulsive responding	**.62**	.52	.11
(2)	**Low Aggressive Behaviors (23.04% of variance)**			
9	This child does not say mean things to his peers	-.08	**.90**	-.09
8	Does not get into verbal arguments with other children	-.06	**.90**	-.07
7	Does not start fights with peers	-.18	**.87**	-.10
10	Does not disrupt peer group with inappropriate behavior	-.24	**.84**	-.14
(3)	**Positive Peer Relations (19.85% of variance)**			
4	This child is accepted by peer group	.26	.16	**.80**
5	Other children want to play with this child	.33	-.01	**.77**
3	This child does not isolate himself from the peer group	.14	-.20	**.69**
1	This child gets along with same-sex peers	.27	.33	**.68**
2	This child gets along with opposite-sex peers	.26	.32	**.66**
6	Other children do not dislike or reject this child	.16	.42	**.55**

APPENDIX F: STANDARDIZED PRINCIPAL COMPONENTS ANALYSES FOR YOUNGER SAMPLE

STANDARDIZED PRINCIPAL COPMPONENTS ANALYSIS
BATES ITEMS CONCERNING TYPICAL BEHAVIOR: 3 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)	(6)
	Active, Persistent, Difficult						
(1)	**(17.9% of variance)**						
28	Child persists in playing with objects when told to leave them alone	**.85**	.06	.14	.02	.28	.10
29	Child continues to go someplace when told to stop	**.83**	.06	.18	.05	.31	.01
32	Child presents difficulty to the average preschool teacher	**.72**	.20	.14	.14	.52	-.02
30	Child gets upset when removed from something of interest	**.71**	.14	.09	07	.49	.12
24	Child does not play well by himself/herself when left alone	**.67**	.17	-.13	.13	.09	-.01
27	It is difficult to take child places	**.66**	.38	.05	.18	.34	-.04
15	Child is typically very active and vigorous	**.65**	-.34	.18	.04	.20	.12
25	Child does not like being confined	**.63**	.09	-.16	-.07	.24	.38
23	Child requires much attention for routine caregiving (e.g. meals)	**.56**	.16	-.09	.29	.39	-.20
31	Child is persistent in trying to get attention when adult is busy	**.52**	-.18	-.17	.02	.47	.08
(2)	**Serious, Unadaptable**						
	(17.0% of variance)						
16	Child smiles and makes happy sounds very little	.12	**.83**	.14	.03	.16	.01
17	Child is usually in a serious mood	.13	**.77**	.17	.10	.31	. 05
22	Child does not get excited when others play with him/her	-.16	**.72**	.11	-.04	.08	-.13
11	Child does not adapt well to new experiences	.20	**.68**	-.28	.37	.13	.09
18	Child does not like playing with adult very much	.17	**.68**	.37	-.09	.06	.07
10	Child responds fearfully to being in a new place	.12	**.68**	-.18	.40	.13	.02
9	Child typically responds fearfully to a new person	-.03	**.67**	-.16	.33	.22	.34
7	Child usually responds negatively to new playthings	.07	**.60**	-.23	.24	.25	.30

20	Child typically responds unfavorably to disruptions in the everyday routine (e.g. field trips, class visitor)	.34	**.54**	.17	.31	.31	.21
4	It is difficult to determine what is bothering child when he/she fusses	.13	.43	.16	.40	.41	-.05
(3)	**Does not like to be held (5.5% of variance)**						
19	Child does not wish to be held most of the time	-.00	-.08	**.79**	.02	.04	.00
26	Child seldom likes to cuddle and snuggle when held	.18	.38	**.66**	.06	-.06	.23
(4)	**Inconsistent Routine (7.4% of variance)**						
3	Child is very inconsistent with his/her eating routine	.00	.18	.09	**.77**	19	-.10
2	Child is very inconsistent with his/her sleeping routine	.31	.06	.00	**.70**	.08	-.02
(5)	**Does not like to be dressed (4.2% of variance)**						
14	Child does not like to be dressed	.16	.07	.19	-.10	.02	**.74**
(6)	**Easily upset, Intense negative expressiveness (16.% of variance)**						
12	Child is very easily upset	.25	.22	-.11	.08	**.81**	.06
6	Child cries and fusses more than the average child	.31	.21	-.01	.11	**.81**	.01
13	Child cries loudly and vigorously when upset	.38	.11	.06	.06	**.76**	.10
5	Child gets fussy or irritable often throughout the day	.33	.14	.01	.10	**.75**	-.02
21	Child's mood changes often and rapidly	.39	.26	-.07	.17	**.71**	.05
1	Child is difficult to calm or soothe when he/she is upset	.22	.29	.13	.26	**.70**	.09

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
INTERPERSONAL COMPETENCE SCALE: 3 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)
(1)	**Sad and Worried (11.77% of variance)**					
15	Always worries	**.80**	.18	-.05	.11	.11
10	Always sad	**.76**	-.15	.14	.32	.04
18	Always Cries	**.61**	-.43	.16	-.07	.36
(2)	**Avoids Conflict (17.01% of variance)**					
9	Never gets in a fight	-.06	**.84**	-.11	-.25	.08
1	Never Argues	-.14	**.82**	.07	-.19	.13
2	Never gets in trouble at school	-.01	**.80**	-.15	-.12	.01
5	Very Shy	.42	**.64**	.20	.28	.14
(3)	**Low Academic Skills (12.60% of variance)**					
11	Number Knowledge Not Good	.05	-.10	**.90**	.04	-.01
8	Letter and Word Knowledge Not Good	.05	-.09	**.90**	.15	.09
(4)	**Unfriendly, Unpopular with Girls (14.90% of variance)**					
3	Never Smiles	.31	.13	.14	**.78**	-.01
17	Never Friendly	.38	-.25	-.03	**.69**	.05
12	Not very popular with girls	-.07	-.28	.27	**.64**	.31
13	Does not have any friends	.06	-.14	.24	**.62**	.57
7	Not Very Good Looking	.02	-.10	.02	**.58**	.18
(5)	**Not athletic, Unpopular with Boys (12.00% of variance)**					
6	Not good at sports	.05	.15	-.02	.03	**.74**
4	Not popular with boys	.14	.01	.00	.29	**.69**
16	Never wins	.15	.19	.44	.16	**.59**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
THE SOCIAL COMPENTENCE AND BEHAVIOR EVALUATION SCALE (PSP): 3 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)	(6)
(1)	**Externalizing Behavior Problems (24.86 % of variance)**						
4	Always gets angry when interrupted	**.88**	.09	-.02	.07	.05	.07
5	Usually gets mad easily	**.88**	.15	.04	-.06	.01	.03
10	Screams often and yells easily	**.86**	-.05	.07	.07	.06	-.02
18	Often gets into conflicts with other children	**.83**	-.16	.17	.07	.03	.04
16	Hits, bites or kicks other children	**.76**	-.12	.28	-.09	.07	.02
11	Often forces other children to do things they don't want to do	**.76**	-.17	.02	.15	-.10	.04
3	Often gets easily frustrated	**.73**	.33	.06	.06	.17	.08
29	Is defiant when reprimanded	**.73**	-.02	.13	-.46	.07	.10
28	Usually opposes your suggestions	**.66**	.02	.05	-.51	.11	.08
27	Does not accept compromises when reasons are given	**.65**	.08	.33	-.19	.18	.00
25	Usually hits or destroys things when he/she is angry with you	**.58**	.01	.21	-.43	.05	-.03
20	Does not take care of his/her toys	**.52**	-.07	.48	-.04	.18	.07
(2)	**Sad and Unpopular (12.97 % of variance)**						
7	Is timid and avoids new situations	-.29	**.78**	.01	.02	-.02	-.15
6	Worries a lot	.13	**.76**	.05	.24	-.10	.08
8	Is sad, unhappy, or depressed	.17	**.72**	.21	.17	.09	-.09
9	Is usually uneasy in a group setting	-.08	**.71**	.15	-.14	.10	-.27
12	Is inactive and watches other children play	-.13	**.66**	.02	-.32	.23	-.31
14	Remains isolated from the group	.04	**.61**	.01	-.23	.25	-.41
2	Is often tired	.08	**.53**	-.06	-.05	.19	.08

	Low Social Cognitive Skills						
(3)	**(11.15 % of variance)**						
15	Does not take other children's point of view into account	-.22	.04	**-.75**	.13	-.04	.10
19	Does not comfort or assist other children in difficulty	-.06	-.05	**-.74**	-.07	-.19	.10
13	Does not negotiate solutions to conflicts with other children	.11	-.06	**-.65**	.42	-.01	.25
22	Is not attentive towards young children	-.09	-.17	**-.63**	-.25	-.10	.07
24	Does not work easily in a group	-.40	-.27	**-.55**	.20	-.24	.02
17	Never cooperates with other children	-.43	-.05	**-.51**	.19	-.07	-.25
(4)	**Cooperative with Teacher (4.57% of variance)**						
(5)	**Prosocial Behaviors (6.05 % of variance)**						
30	Takes pleasure in his/her own accomplishments	-.16	-.18	-.23	.02	**-.76**	.12
26	Always helps with everyday tasks	-.18	-.14	-.39	.02	**-.70**	-.13
21	Interacts with peers during group activities	.05	-.26	-.02	.09	**-.56**	.52
(6)	**No expressiveness, Unnoticed (6.13 % of variance)**						
1	Maintains neutral facial expressions, does not smile or laugh	.03	.13	.18	.09	-.03	**-.79**
23	Usually goes unnoticed in a group	-.37	.35	.08	-.09	.10	**-.59**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
SOCIAL BEHAVIOR SCALE: 3 YEAR OLDS

	Factor Name and Item Description	(1)
(1)	**High Social Behavior Problems (78.14% of variance)**	
2	Reacts with angry behavior in response to other children's teasing	**.92**
7	Says unpleasant thing to other children (e.g. name calling, verbal derogation)	**.90**
1	Is disturbing to other children; teases provokes fights and interrupts others	**.90**
3	Argues and must have the last word in verbal exchanges	**.88**
5	Manipulates, threatens, and uses coercive tactics to force the submission of peers	**.87**
4	Displays physical aggression toward objects or persons	**.86**
6	Uses an impatient or cranky tone of voice when speaking to others	**.85**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
TEACHER RATING OF SOCIAL SKILL: 3 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)
(1)	**High Social Cognitive Skills (29.71% of variance)**			
13	Accurately interprets what a peer is trying to do	**.89**	-.02	.12
12	Is socially aware of what is happening in a situation	**.87**	.04	.24
17	Is aware of the effects of his/her behavior on others	**.85**	.12	.18
15	Can generate many solutions to interpersonal problems	**.84**	.10	.20
16	Generates good quality solutions to interpersonal problems	**.84**	.14	.28
11	Is skilled at understanding others' feelings	**.81**	.13	.27
14	Refrains from over-impulsive responding	**.62**	.46	.08
(2)	**Low Aggression (22.66% of variance)**			
8	Gets into verbal arguments with peers	-.04	**-.91**	-.05
9	Says mean things to peers (e.g. teasing or name calling)	.02	**-.90**	-.10
7	Starts fights with peers	-.16	**-.88**	-.10
10	Disrupts peer group with inappropriate or attention getting behavior	-.21	**-.83**	-.20
(3)	**Positive Peer Relations (18.77% of variance)**			
4	Is accepted by the peer group	.15	.20	**.79**
5	Other children like to play with him/her	.29	-.01	**.74**
1	Gets along well with the same sex	.19	.35	**.72**
3	Does not isolate himself/herself from the peer group	.14	-.20	**.71**
2	Gets along well with children of the opposite sex	.27	.37	**.62**
6	Is liked by other children and is not rejected	.19	.39	**.51**

APPENDIX G: PRINCIPAL COMPONENT ANALYSIS FACTORS FOR YOUNGER PARTICIPANTS

The number of participants for which data was available and principal components for the five teacher ratings of social behavior and temperament for younger participants.

Teacher Components: Three Year Old	N	% of Variance
BATES CHILD CHARACTERISTICS QUESTIONNAIRE		
Active, Persistent, Difficult	96	17.9%
Serious, Unadaptable	96	17.0%
Does Not Like to be Held	96	5.5%
Inconsistent Routine	96	7.4%
Does Not Like to be Dressed	96	4.2%
Easily Upset, Intense Negative Expressiveness	96	16.6%
Total Variance Explained :		**68.6%**
INTERPERSONAL COMPETENCE SCALE		
Internalizing Negative Affect	96	11.8%
Avoids Conflict	96	17.0%
Low Academic Skills	96	12.6%
Unfriendly, Unpopular with Girls	96	14.9%
Not Athletic, Unpopular with Boys	96	12.0%
Total Variance Explained:		**68.3%**
PRESCHOOL SOCIO-AFFECTIVE PROFILE (PSP)		
Externalizing Behavior Problems	90	24.9%
Sad and Unpopular	90	13.0%
Low Social Cognitive Skills	90	11.2%
Cooperative with Teacher	90	4.6%
Antisocial Behaviors	90	6.1%
Goes Unnoticed	90	6.1%
Total Variance Explained:		**65.9%**
THE SOCIAL BEHAVIOR SCALE		
High Social Behavior Problems	96	78.1%
Total Variance Explained:		**78.1%**
TEACHER RATING OF SOCIAL SKILL		
High Social Cognitive Skills	96	29.7%
High Aggression	96	22.7%
Positive Peer Relations, Popular	96	18.8%
Total Variance Explained		**71.2%**

APPENDIX H: STANDARDIZED PRINCIPAL COMPONENTS ANALYSES FOR OLDER SAMPLE

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
BATES ITEMS CONCERNING TYPICAL BEHAVIOR: 4 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)	(6)
(1)	**Persistent, Difficult, Easily Upset (27.8% of variance)**						
6	Child cries and fusses more than the average child	**.85**	.15	-.16	.05	.13	.14
32	Child presents difficulty to the average preschool teacher	**.83**	.11	.21	.07	-.16	.10
30	Child gets upset when removed from something of interest	**.81**	.17	.19	.18	.04	-.08
12	Child is very easily upset	**.80**	.19	-.17	-.04	.21	.09
28	Child persists in playing with objects when told to leave them alone	**.79**	-.06	.32	.28	-.06	-.08
13	Child cries loudly and vigorously when upset	**.77**	.17	-.09	.01	.18	.03
21	Child's mood changes often and rapidly	**.75**	.35	-.07	-.06	.11	.05
29	Child continues to go someplace when told to stop	**.75**	-.04	.35	.32	-.10	-.09
1	Child is difficult to calm/soothe when he/she is upset	**.72**	.23	-.07	.05	.31	.25
5	Child gets fully or irritable often throughout the day	**.70**	.13	-.15	.22	.19	.12
27	It is difficult to take the child places	**.69**	.25	.22	.38	-.11	.13
31	Child is persistent in trying to get attention when adult is busy	**.68**	.04	-.12	-.01	-.25	-.33
23	Child requires much attention for routine caregiving	**.66**	.24	-.18	-.04	-.38	.09
15	Child is typically active and vigorous	**.55**	-.20	.14	.23	-.34	-.31
24	Child does not play well by himself/herself when left alone	**.53**	.00	-.28	.13	-.30	.25
25	Child does not like to be confines	**.51**	.38	.06	-.12	-.18	-.36
(2)	**Unadaptable (13.8% of variance)**						
11	Child does not adapt well to new experiences	.19	**.83**	-.01	.18	.07	.15

9	Child typically responds fearfully to a new person	.05	**.81**	.09	.08	.04	.28
10	Child responds fearfully to being in a new place	.16	**.76**	-.03	.19	.05	.29
8	Child typically responds negatively to new food	.04	**.71**	-.07	.02	-.19	-.02
7	Child usually responds negatively to new playthings	.20	**.63**	.00	.17	.18	.24
20	Child typically responds unfavorably to disruptions in the everyday routine (e.g. field trips, class visitor)	.41	**.60**	-.05	.15	.06	.22
(3)	**Does Not Like to be Held (6.5% of variance)**						
19	Child does not wish to be held most of the time	-.03	-.07	**.80**	-.10	.16	.12
26	Child seldom likes to cuddle and snuggle when held	.03	.05	**.75**	.05	.02	.36
(4)	**Inconsistent Routine (5.6% of variance)**						
3	Child is very inconsistent with his/her eating routine	.10	.33	-.13	**.77**	.17	.07
2	Child is very inconsistent with his/her sleeping routine	.28	.24	.04	**.72**	.05	.02
(5)	**Does Not Like to be Dressed (4.3% of variance)**						
14	Child does not like to be dressed	.04	.02	.08	.12	**.63**	-.04
(6)	**Serious, Does Not Like to Play with Others (9.6% of variance)**						
17	Child is usually in a serious mood	.25	.31	.03	.01	.06	**.76**
16	Child smiles and makes happy sounds very little	.15	.36	.15	-.06	-.01	**.73**
22	Child does not get excited when others play with him/her	-.10	.26	.13	.06	-.02	**.72**
18	Child does not like playing with adult very much	-.06	.09	.44	.09	-.09	**.64**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
INTERPERSONAL COMPETENCE SCALE:4 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)
(1)	**Unpopular, Unfriendly (17.96% of variance)**					
12	Not very popular with girls	**.77**	-.08	.24	.04	.24
13	Does not have any friends	**.76**	.00	.22	.08	.43
3	Never Smiles	**.74**	.13	-.04	.42	-.07
17	Never Friendly	**.68**	.23	.03	.38	-.10
7	Not Very Good Looking	**.59**	-.21	-.03	-.05	.26
4	Not very popular with boys	**.56**	.03	.17	.07	.53
(2)	**Avoids Conflict (16.12% of variance)**					
2	Never gets in trouble at school	-.08	**.83**	-.20	.01	.04
1	Never Argues	-.21	**.78**	-.05	-.14	.26
9	Never gets in a fight	-.23	**.78**	-.12	-.14	.24
18	Never Cries	-.07	**.64**	-.05	.44	.24
5	Very Shy	.21	**.53**	.12	.28	.16
(3)	**Low Academic Skills (11.11% of variance)**					
8	Letter and Word Knowledge Not Good	.16	-.11	**.91**	.03	.11
11	Number Knowledge not good	.13	-.10	**.91**	.00	.18
(4)	**Internalizing Negative Affect (10.48% of variance)**					
15	Always worries	.09	.03	-.02	**.78**	.10
10	Always sad	.28	-.28	.09	**.74**	.02
(5)	**Not athletic, Never Wins (13.04% of variance)**					
16	Never wins	.22	.11	.16	.17	**.78**
6	Not good at sports	.30	.16	-.05	-.15	**.71**
14	Never gets their way	-.02	.23	.29	.19	**.59**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
THE SOCIAL COMPETENCE AND BEHAVIOR EVALUATION SCALE: 4 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)	(4)	(5)
(1)	**Externalizing Behavior Problems (24.82% of variance)**					
5	Child is irritable and gets mad easily	**.88**	-.10	.14	.07	.04
4	Child gets Angry when Interrupted	**.87**	-.09	.08	-.04	.05
10	Child screams or yells easily	**.84**	.01	.12	-.06	-.11
18	Child gets into conflicts with other children	**.83**	.15	.23	-.02	-.13
3	Child is easily frustrated	**.79**	-.29	.10	.03	-.07
29	Child is defiant when reprimanded	**.74**	.15	.14	-.04	-.12
11	Child forces others to do things they don't want to do	**.74**	.04	.26	.14	.21
28	Child opposes your suggestions	**.72**	.07	.23	.15	.18
16	Child hits, bites, or kicks other children	**.71**	.09	.34	.18	.04
27	Child does not accept compromises	**.58**	.02	.52	.22	.02
25	Child hits you or destroys things when angry with you	**.54**	.05	.16	.45	.39
(2)	**Popular, Happy (15.65% of variance)**					
14	Child is always part of the group	-.02	**-.82**	.14	.06	.08
12	Child is active	-.12	**-.80**	.05	.02	-.04
7	Child is not afraid of new situations	-.13	**-.80**	.16	.12	.14
9	Child is comfortable and outgoing in a group setting	-.02	**-.78**	.24	-.06	-.05
23	Child never goes unnoticed in a group	-.24	**-.65**	.08	.10	.36
8	Child never seems unhappy, sad and/or depressed	.37	**-.62**	-.02	.14	-.03
6	Child doesn't worry much	.31	**-.61**	-.24	.11	-.12
(3)	**Low Social Cognitive Skills (15.82% of variance)**					
15	Child does not take other children's point of view into account	-.34	.07	**-.77**	.05	.10
13	Child does not negotiate conflicts to solutions with other children	-.03	.16	**-.75**	-.06	-.04
26	Child does not help with everyday tasks	-.09	-.06	**-.69**	-.28	-.39
19	Child does not comfort another child in difficulty	-.36	.18	**-.67**	-.29	.18
22	Child is not attentive towards younger children	-.34	.23	**-.67**	.21	-.21

24	Child does not work easily in a group	-.50	.08	**-.62**	.01	.31
20	Child does not take care of toys	-.42	-.07	**-.59**	-.27	.09
30	Child does not take pleasure in his/her own accomplishments	-.08	.07	**-.58**	.15	-.30
17	Child does not cooperate with other children	-.15	.22	**-.52**	.06	-.21
(4)	**Inactive (4.46% of variance)**					
12	Child is usually inactive and just watches others play	.10	-.31	.02	**.78**	-.05
(5)	**Shows no Positive Affect, Expressionless (4.70% of variance)**					
1	Child rarely maintains a neutral expression, rarely smiles or laughs	.11	-.53	-.19	-.02	**.53**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
SOCIAL BEHAVIOR SCALE: 4 YEAR OLDS

	Factor Name and Item Description	**(1)**
(1)	**Externalizing Behavior Problems (79.14% of variance)**	
7	Says unpleasant thing to other children (e.g. name calling, verbal derogation)	**.93**
1	Is disturbing to other children; teases provokes fights and interrupts others	**.91**
6	Uses an impatient or cranky tone of voice when speaking to others	**.90**
2	Strikes back with angry behavior in response to other children's teasing	**.90**
3	Argues and always has to have the last word	**.87**
5	Manipulates, threatens, and uses coercive tactics to force the submission of peers	**.87**
4	Displays physical aggression toward objects or persons	**.86**

STANDARDIZED PRINCIPAL COMPONENTS ANALYSIS
TEACHER RATING OF SOCIAL SKILL: 4 YEAR OLDS

	Factor Name and Item Description	(1)	(2)	(3)
(1)	**High Social Cognitive Skills (30.87% of variance)**			
15	Can generate many solutions to interpersonal problems	**.87**	.20	.24
16	Generates good quality solutions to interpersonal problems	**.87**	.21	.25
12	Is socially aware of what is happening in a situation	**.84**	.10	.38
13	Accurately interprets what a peer is trying to do	**.84**	.11	.27
17	Is aware of the effects of his/her behavior on others	**.82**	.23	.28
11	Is skilled at understanding others' feelings	**.80**	.24	.33
14	Refrains from over-impulsive responding	**.61**	.57	.13
(2)	**Low Aggression (23.67% of variance)**			
8	Gets into verbal arguments with peers	-.06	**-.90**	-.09
9	Says mean things to peers (e.g. teasing or name calling)	-.17	**-.90**	-.07
7	Starts fights with peers	-.21	**-.86**	-.10
10	Disrupts peer group with inappropriate or attention getting behavior	-.28	**-.84**	-.08
(3)	**Popular (20.79% of variance)**			
4	Is accepted by the peer group	.36	.12	**.81**
5	Other children like to play with him/her	.37	.00	**.79**
2	Gets along well with children of the opposite sex	.26	.27	**.69**
3	Does not isolate himself/herself from the peer group	.16	-.20	**.68**
1	Gets along well with the same sex	.36	.31	**.63**
6	Is liked by other children and not rejected by them	.12	.45	**.60**

APPENDIX I: PRINCIPAL COMPONENTS ANALYSIS FACTORS FOR OLDER PARTICIPANTS

Table 10. The number of participants for which data was available and principal components for the five teacher ratings of social behavior and temperament for older participants.

Teacher Components: Four Year Old	N	% of Variance
BATES CHILD CHARACTERISTICS QUESTIONNAIRE		
Persistent, Difficult, Easily Upset	71	27.8%
Unadaptable	71	13.8%
Does Not Like to be Held	71	6.5%
Inconsistent Routine	71	5.6%
Does Not Like to be Dressed	71	4.3%
Serious, Does Not Like to Play with Others	71	9.6%
Total Variance Explained :		**67.6%**
INTERPERSONAL COMPETENCE SCALE		
Unpopular, Unfriendly	73	18.0%
Avoids Conflict	73	16.1%
Low Academic Skills	73	11.1%
Internalizing Negative Affect	73	10.5%
Not Athletic, Never Wins	73	13.0%
Total Variance Explained:		**68.7%**
PRESCHOOL SOCIO-AFFECTIVE PROFILE (PSP)		
Externalizing Behavior Problems	71	24.8%
Popular, Happy	71	15.7%
Low Social Cognitive Skills	71	15.8%
Inactive	71	4.5%
Neutral Expression	71	4.7%
Total Variance Explained:		**65.5%**
THE SOCIAL BEHAVIOR SCALE		
High Social Behavior Problems	48	79.1%
Total Variance Explained:		**79.1%**
TEACHER RATING OF SOCIAL SKILL		
High Social Cognitive Skills	73	30.1%
High Aggression	73	23.7%
Positive Peer Relations, Popular	73	20.8%
Total Variance Explained		**74.6%**

APPENDIX J: CORRELATIONS FOR TEACHER FACTORS

Correlational Analyses of positive and negative rate of expressiveness and teacher rated measures of affect and social competence for younger and older participants.

	N		Positive Expressiveness		Negative Expressiveness	
	Old	Young	Old	Young	Old	Young
Teacher Rated Positive Affect	76	102	-.09	.20*	-.07	-.16
Teacher Rated Negative Affect	76	102	.03	.02	-.16	-.02
Teacher Rated Life Success	76	102	.22	.33**	-.15	-.20*
Teacher Rated Regulation and Reactivity	76	102	.06	-.12	.27*	.49**

*$P<.05$, **$P<.01$

Age Differences in correlations for indicators of social competence and positive and negative expressiveness.

	Older N	Younger N	Age Difference in RTE POS	Age Difference in RTE NEG
Teacher Rated Positive Affect	76	102	.29	.09
Teacher Rated Negative Affect	76	102	.01	.14
Teacher Rated Life Success	76	102	.11	.05
Teacher Rated Regulation and Reactivity	76	102	.18	.22

**$p<.01$, *$p<.05$

Correlational Analyses of positive and negative rate of expressiveness and teacher rated measures of affect and social competence for African American and European American participants (n=102).

	N		Positive Expressiveness		Negative Expressiveness	
	AA	EA	AA	EA	AA	EA
Teacher Rated Positive Affect	63	102	.14	.15	.21	-.13
Teacher Rated Negative Affect	63	102	.11	-.08	-.32*	-.07
Teacher Rated Life Success	63	102	.32*	.35**	-.03	-.02
Teacher Rated Regulation and Reactivity	63	102	-.10	-.08	.26*	.28**

*$P<.05$, **$P<.01$

Race Differences in correlations for indicators of social competence and positive and negative expressiveness.

	African American N	European American N	Race Difference in RTE POS	Race Difference in RTE NEG
Teacher Rated Positive Affect	63	106	.01	.34*
Teacher Rated Negative Affect	63	106	.19	.26
Teacher Rated Life Success	63	106	.03	.01
Teacher Rated Regulation and Reactivity	63	106	.02	.02

**$p<.01$, *$p<.05$