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PARENT-CHILD ATTACHMENT AND COMMUNICATION QUALITY AS
INDICATORS OF PSYCHOLOGICAL ADJUSTMENT: PRELIMINARY
IMPLICATIONS FOR PSYCHOLOGICAL MALTREATMENT RESEARCH

By

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Abstract

This study examined the dynamics of the parent-child relationship by determining whether or not the quality of parent-child attachment and communication patterns are related to child endorsed adjustment outcomes. In addition, examination of the parent-child relationship is a useful way to better understand the domain of psychological maltreatment, and likewise, attachment and communication quality are suggested to be major contributing factors to the development of psychological maltreatment. 42 children completed the Parent-Adolescent Communication scale (PACS), the Inventory of Parent and Peer Attachment (IPPA), and the Emotional Symptoms Index (ESI). 22 parents completed the Child Behavior Checklist (CBCL) and the Matson Evaluation of Social Skills for Youngsters (MESSY). Results indicate that both attachment and communication quality are significantly related to psychopathological symptoms and measures of social adjustment, emotional adjustment, and self-esteem. In addition, our results suggest that psychologically maltreated children are especially prone to developing both social and emotional maladjustment.

Parent-Child Attachment and Communication Quality

as Indicators of Psychological Adjustment:

Preliminary Implications for Psychological Maltreatment Research

Psychological Maltreatment

Though psychological maltreatment is still vastly understudied, most researchers agree that it has tremendous potential for causing harm, and consequently, it is considered to be the core issue behind all forms of child maltreatment (Hart & Brassard, 1987; Garbarino & Vondra, 1987; Navarre, 1987; Grusec & Walters, 1991). Ironically, though psychological maltreatment is an issue that demands further consideration, it has received much less attention than other forms of maltreatment, and controversy still abounds surrounding its definition. While researchers agree that psychological maltreatment definitely exists, there has been no consensus on how it should be defined.

Recently, attention has become focused on examining the dynamics of the parent-child relationship as a way to better understand the domain of psychological maltreatment. Likewise, a useful way of examining these dynamics is to focus on the quality of both the attachment relationship and communication patterns. In addition to the importance that adaptive parent-child attachment and communication patterns have for optimal development, it is suggested that the quality of parent-child attachment and communication patterns are major contributing factors to the development of psychological maltreatment. Therefore, the examination of attachment and communication quality in a normal sample of children could provide preliminary implications for psychological maltreatment research.

This study will first determine whether or not the quality of attachment and communication patterns between parents and children are related to various child-endorsed psychopathological symptoms. In this way we hope to emphasize the importance that attachment and communication patterns play in adaptive development.

Next, we will look specifically at what implications our results have for psychological maltreatment research. In particular, we plan to determine whether or not the association between parent-child attachment and communication patterns and child endorsed psychopathology in our normal sample of children can augment our knowledge of what this association is like in a psychologically maltreated sample of children.

It is important to emphasize however that we do not have a clinically referred sample; rather, our goal is to examine attachment and communication quality in a normal population of children. Therefore, while we are not directly measuring psychological maltreatment, our findings may support links between parent-child attachment and communication quality and psychological adjustment in a psychologically maltreated sample. Likewise, our results could offer important hypotheses to be tested in a clinically referred sample of children at risk for psychological maltreatment.

With psychological maltreatment being the core issue behind all forms of abuse, it is not surprising that child reports of perceived psychological maltreatment, even when the effects of other types of maltreatment are accounted for, explain the greatest amount of variance associated with self-reported adjustment scores. Furthermore, internalizing symptoms are most strongly related to children with a history of psychological maltreatment, as opposed to any other type of maltreatment (McGee et al, 1997).

It is also believed that the psychological consequences associated with other types of abuse are what cause the most damage (Hart, et al., 1987; Garbarino & Vondra, 1987). The psychological maltreatment experienced by children who have been sexually abused, physically abused, and/or neglected, appears to be the main cause of subsequent negative outcomes (Hart et al., 1987; Claussen & Crittenden, 1991; Vissing et al., 1991; Abramson & Lucido, 1991; Friedrich et al., 1987; Nash et al., 1993; Erickson & Egeland, 1987; Egeland et al., 1983).

However, while the evidence suggests that psychological maltreatment has tremendous potential for causing harm, the ambiguity surrounding this issue hinders our understanding of the exact nature and consequences of psychological maltreatment. In part, this ambiguity exists because there are numerous factors that must be considered when attempting to define and understand psychological maltreatment. These include such things as the child's age and subsequent developmental stage, the relationship of the perpetrator, as well as various risk and protective factors (Aber & Zigler, 1981; Garbarino et al., 1986; McGee & Wolfe, 1991).

Perhaps a more specific focus on this problem rests on whether or not emphasis should be placed on the caregivers actions or on the outcomes demonstrated by the maltreated child. As a general rule, both parental acts and child outcomes need to be considered (McGee & Wolfe, 1991), but psychological maltreatment poses a significant challenge because there are numerous acts committed by parents that can be termed psychologically damaging; and, there are a multitude of symptoms reported by children who have been psychologically maltreated.

Recently, efforts to better understand the nature of psychological maltreatment have been centered on examining the developmental processes that psychological maltreatment interferes with. As a general rule, maltreatment appears to interfere with the child's cognitive, social, and emotional development (Cicchetti, 1989; Wolfe, 1987); but more specifically, psychological maltreatment appears to interfere with a child's social and emotional development, and in particular, the development of self-esteem. Regardless of the nature of maltreatment, both emotional competency (Brunngraber, 1986; Egeland et al., 1983; Oates et al., 1984; Tong et al., 1987) and social competency (Egeland & Erickson, 1987; Egeland et al., 1983; Houck & King, 1989) have consistently been found to be comprised in various populations of maltreated children.

Parent-Child Environment System

Recently, focus has become centered on examining the dynamics of the parent-child relationship as a way to better understand the domain of psychological maltreatment (Fraiberg, 1980; Cicchetti, 1987). As posited by Cicchetti & Rizley (1981) it is "plausible to view maltreatment phenomena as expressions of an underlying dysfunction in the parent-child environment system, rather than solely the result of aberrant personality traits, environmental stress, or deviant child characteristics" (p. 50).

The parent, child, and environment all contribute to the development of psychological maltreatment and all are interdependent upon each other (Schmidt & Eldridge, 1986); thus lending the examination of the parent-child relationship as a whole more beneficial than looking at parental acts separately from child outcomes. For example, knowing that

physically hurting a child constitutes an abusive act does not tell us why some children are more adversely affected than other children by physical abuse.

In response, both clinicians and researchers have begun to explore the dynamics of the parent-child relationship by focusing on the quality of the attachment relationship and the specific constitutions of parent-child interactions (Schmidt and Eldridge, 1986; Iwaniec, 1995). Moreover, a common way of examining parent-child interactions is to assess the quality of parent-child communications (Schmidt & Eldridge, 1986; McGee & Wolfe, 1991).

Furthermore, in accordance with theories surrounding developmental psychopathology (Cicchetti, 1984, 1993), the examination of the parent-child relationship in a normal sample of children has implications for what the parent-child relationship is like in a psychologically maltreated sample of children. In conjunction with the importance that adaptive attachment and communication patterns have for optimal development, both attachment and communication quality are also suggested to be major contributing factors to the development of psychological maltreatment. Thus, an examination of the relationship between the quality of parent-child attachment and communication patterns and child-endorsed adjustment outcomes in a normal sample of children could augment our knowledge of what this same relationship is like in a population of psychologically maltreated children.

Communication. The importance of healthy communication between parents and children has been well documented (Stafford & Dainton, 1995). In order for children to adaptively develop, parents must provide opportunities for their children to develop

normal communication patterns (Wekerle & Wolfe, 1993; Cicchetti & Lynch, 1995; Socha & Stamp, 1995). Furthermore, the quality of communication patterns between parents and children play an important role in social and emotional development (Bretherton, 1996; Fivush, 1993).

The importance of positive communication begins as soon as infants enter the world. Infants use signals, (i.e. crying, reaching, looking), in order to get their parent's attention (Bowlby, 1969; Newson, 1979; Stern, 1985), and when parents respond in an appropriate and sensitive manner to these signals, they are helping to optimize their children's development (Sameroff & Chandler, 1975; Bornstein & Tamis-LeMonda, 1989; Gunnar, 1980; Martin, 1989; Skinner, 1986).

More specifically, responsive communication patterns between infants and parents are especially important for social development (Aber & Allen, 1987). Sroufe and Waters (1977) suggest that our first social experience arises when, as infants, we learn to internalize the expectation that our mother will respond to us. When mothers are more responsive to their children as infants, children tend to develop a more positive sense of their own social competence (Beckwith & Cohen, 1989), have fewer behavior problems, and better peer relations (Goldberg et al., 1989).

Communication patterns also play an important role in the development of self-identity; and as posited by Erickson (1963, 1968), it is crucial for a child to have a clear sense of identity in order to develop adaptively. Not surprisingly, children who have a poor sense of identity often display signs of psychological maladjustment (Bernard, 1981; Donovan, 1975). Parents help to create an optimal environment for the development of

self-identity in their children, when they discuss their children's fears and worries, and when they communicate to them that it is okay to explore the world (Fitzpatrick & Vangelisti, 1995; Marcia 1966, 1976). Children raised within these types of families are typically more nurturing with their peers, have higher self-esteems, are less anxious, and more capable of forming satisfying relationships with their peers (Fitzpatrick & Vangelisti, 1995; Kahn et al., 1985; Orlofsky et al., 1973).

In addition, children tend to have higher self-esteems when their parents communicate in a supportive manner (Buri et al., 1987; Gecas & Schwalbe, 1986; Hoelter & Harper, 1987). Not surprisingly, when parent's communication consists mainly of criticism, children tend to develop a negative sense of self (Amoroso & Ware, 1986). Also, high levels of conflict between parents and children are related to lowered self-esteem, poor school performance, and emotional maladjustment in children (Amato, 1987; Emery & O'Leary, 1984; Ochiltree & Amato, 1983; Porter & O'Leary, 1980).

In addition to the importance that communication plays in adaptive development, another reason to focus on communication patterns as an assessment of parent-child interactions, lies in its relevance to psychological maltreatment. McGee and Wolfe (1991) suggest that "psychologically abusive acts should be regarded as parent-to-child communications" (p. 10). Instead of focusing on the specific acts of psychological maltreatment, (i.e. rejection, isolation, exploitation), they suggest instead that maltreatment lies along a continuum of seriousness. This is also congruent with the theory that parenting in general lies on a continuum. If we should not dichotomize parenting as either "good" or "bad", McGee and Wolfe (1991) suggest that categorizing

psychologically damaging acts will also not be as beneficial. In this sense, they advocate finding continuous measures of parent-child interactions in order to best understand the dynamics of psychological maltreatment. Consequentially, they propose that communication quality is the best avenue of research.

Looking more specifically at the interplay between communication and child maltreatment; parents who maltreated their children engage in communication patterns that are of poor quality (O'Hagan, 1993); and typically, maltreating families communicate less with each other than non-maltreating families do, (Burgess and Conger, 1978). In addition, maltreated children use fewer internal-state words than non-maltreated children (Bretherton and Beeghly, 1982); and in general, they are less able than non-maltreated children to communicate physiological and emotional states, (Beeghly and Cicchetti, 1994).

The importance of healthy communication for adaptive development lends support to the suggestion that communication patterns are a good way of examining the nature of parent-child interactions. In addition, communication patterns appear to be of particular relevance in explaining parent-child interactions in psychologically abusive families. For these reasons, this study will assess the dynamics of the parent-child relationship by measuring the quality of communication between parents and children.

Attachment. The phenomenon of attachment has become a major focus in psychological maltreatment research. It is suggested that disruptions in the attachment process between parents and children is a major etiological factor in families that psychologically maltreat their children (Cicchetti & Carlson, 1989; Fraiberg et al., 1975;

Cassidy & Berline, 1994; Iwaniec, 1995; Thompson & Kaplan, 1996; Crittenden & Ainsworth, 1989; Stafford & Dainton, 1995); and not surprisingly, children who have been psychologically maltreated tend to be poorly attached to their parents (Iwaniec, 1995; Schneider-Rosen & Cicchetti, 1984; Carlson et al, 1989; Egeland & Sroufe, 1981).

Attachment, as first conceptualized by Bowlby (1959), is a process necessary for the survival and safety of children. When children begin to feel anxious they instinctively activate attachment behavior as a means of gaining close proximity with their primary care-giver. Therefore, attachment behavior is any behavior that will initiate this close proximity, (i.e. crying, smiling, and reaching).

While attachment behavior is a necessity, repeatedly engaging in this behavior can be maladaptive. If children are constantly anxious and seeking closeness, they do not have as much time to explore their environment, and thus, have less time to learn about the world in general. Therefore, attachment theory has been further conceptualized by recognizing that children use their primary care-giver, (or attachment figure), as a secure base from which to explore (Ainsworth et al., 1978; Belsky & Cassidy, 1994).

In addition to providing opportunities for exploration, attachment theory posits that it is through these early relationships that children first begin to learn about themselves and about others. This relationship with an attachment figure allows the child to form mental representations, or internal working models, of their own worthiness based on their attachment figure's availability and willingness to provide love and attention (Ainsworth et al., 1978; Howe et al., 1999). This internal working model becomes the basis of reference for what children come to expect about themselves, others, and relationships in

general. In addition, the model includes guidelines that dictate how to regulate emotions and thoughts that deal with attachment related issues.

It is important to emphasize however that attachment behavior does not simply characterize the child; rather, attachment behavior characterizes the relationship between the child and the attachment figure (Grossmann et al., 1981; Lamb, 1978; Lamb et al., 1982; Main & Weston, 1981). A child's temperament for example does not solely predict the attachment relationship because many children have different attachment patterns with different parental figures (Egeland & Farber 1984; Main & Weston, 1981). Furthermore, the quality of the attachment relationship is largely dependent upon the parent. While individual differences in children's behavior can influence the attachment relationship, their impact is suggested to be minimal (Sroufe 1985).

As stated previously, if the attachment relationship is of poor quality, children have a limited amount of time to explore and learn about their environment; however, this is not the only negative outcome of a poor attachment relationship. When children engage in attachment behavior and are either rejected or poorly responded to, they will develop defensive strategies in order to cope with their frequent feelings of anxiety and distress.

With the development of the Ainsworth and Wittig Strange Situation paradigm, these defensive strategies were conceptualized as specific patterns of behavior (Ainsworth & Wittig, 1969). When attachment behavior is activated, securely attached children have come to learn that their anxiety and distress will be properly recognized and responded to. This type of attachment behavior is optimal. If however, attachment figures respond with agitation and annoyance, children learn to contain their feelings of anxiety. This

defensive strategy is characterized as an avoidant pattern because children have learned that by not communicating their distress, they are more likely to remain in close proximity to their attachment figure. Finally, when an attachment figure is inconsistent and unreliable, children learn to maximize their attachment behavior. This defensive strategy is characterized as an ambivalent style because these children must constantly engage in attachment behavior in order to get their parent's attention. Therefore, a healthy attachment relationship is characterized as being secure, while an unhealthy attachment relationship is characterized as being insecure, (either avoidant or ambivalent).

Using this style of classification, it has been found that in a population of maltreated children, approximately two-thirds are classified as insecurely attached (Egeland & Sroufe, 1981; Schneider-Rosen & Cicchetti, 1984a; Schneider-Rosen & Cicchetti, 1984b; Crittenden, 1985; Lamb et al., 1985; Youngblade & Belsky, 1989a). This evidenced an unusual pattern because in populations of non-maltreated children, approximately one-third are classified as insecurely attached.

However, the 30% of maltreated children classified as secure sheds doubt upon the theory that attachment is a major etiological factor in the development of maltreatment. This concern, as well as discrepancies observed within the coding system, led Crittenden (1988) to develop a fourth category. This fourth category, termed *disorganized / distressed*, is characterized by inconsistent and incoherent attachment behavior because these children have no way to ensure proximity and often engage in a variety of different behaviors, all of which inevitably fail. With the inclusion of this fourth category,

researchers found that approximately 90 % of maltreated infants were classified as insecurely attached, with the majority displaying disorganized/distressed attachment patterns (Lyons-Ruth et al., 1987; Carlson et al., 1989).

Studies utilizing the Strange Situation classification system with infants and toddlers clearly indicate that maltreated children display insecure patterns of attachment. Not surprisingly, numerous studies have also shown a predictive link between insecure attachment and subsequent maladjustment. In general, attachment security is associated with a variety of child behaviors and outcomes, such as later curiosity, enjoying problem solving, sociable behavior (Matas et al, 1978; Pastor, 1981), play initiation, sensitivity to peers, and popularity (Waters et al, 1979). More specifically however, insecure attachment has been consistently linked with later social-emotional adjustment (Ainsworth et al, 1979). Longitudinal studies have shown predictive links between early attachment security and later measures of perceived social support, emotional and behavioral well-being (McLeister & Douglas, 1999), and adaptive peer relations, (Sroufe & Rutter, 1984; La Freniere & Sroufe, 1985)

In addition, while most of the attachment research focuses on this classification system, it is important to remember that attachment relationships are influential to the development of children at all ages (Crittenden & Ainsworth, 1989; Ainsworth et al., 1978; Cicchetti & Toth, 1995; Lyncy & Cicchetti, 1991; Main & Cassidy, 1988). Preschoolers with a history of insecure attachment have been found to display a lower social competence and more maladaptive peer relations (Lewis et al, 1984; Park & Waters, 1989; Turner, 1991). Parental attachment has also been linked with perceived

expectations of social support (Kenneth et al, 1997), academic and emotional adjustment, self-esteem, and assertiveness (Kenny, 1994; Denny & Donaldson, 1991; Schultheiss & Blustein, 1994) in adolescents. Even in university students, parental attachment has been found to be related to numerous aspects of emotional functioning, such as; depression, anxiety, resentment, alienation, irritability, anger, and guilt (Armsden & Greenberg, 1987; Greenberg et al, 1983).

The importance of a secure attachment relationship for adaptive development lends credence to the assumption that by examining attachment relationships, we can better assess the nature of parent-child relationships. In addition, because attachment is considered to be a major etiological factor in the development of psychological maltreatment, this study will assess the dynamics of the parent-child relationship by measuring the quality of attachment between parents and children.

Goals of the Current Study

In this study we hope to further support the importance that adaptive attachment and communication patterns have for optimal development. First we will examine the relationship between parent-child attachment and communication quality and child-endorsed psychopathology. In light of the suggested importance that adaptive attachment and communication patterns have for optimal development, we have hypothesized that even in a normal population, children who are more poorly attached and who communicate more poorly will display more psychopathological symptoms, and in particular, more social and emotional maladjustment, than children who are more securely attached and who communicate more adaptively.

Furthermore, we believe that our results will have preliminary implications for psychological maltreatment research. Specifically, we have hypothesized that children who are more poorly attached to their parents and who communicate more poorly with their parents will display more social and emotional maladjustment, and in particular a lower self-esteem, than children who are more securely attached and who communicate more adaptively.

Method

Participants:

The children in this study were students of St. Patrick's Elementary School, located in Richmond, VA. Initially, participants consisted of 47 children: 10 2nd grades, 7 3rd grades, 11 4th grades, 8 5th grades, and 11 6th graders. However, 5 children in the 2nd grade were dropped because of obvious difficulty in completing their questionnaires, and per suggestion from the 2nd grade teacher. Thus, a total of 42 children, (22 males and 20 females), and 22 parents participated in the study.

Procedure:

Permission slips were sent home to all parents of children in 2nd through 6th grade. As an incentive to parents and children to return the permission slips, each class that had a 100% return rate, regardless of whether or not the parent wanted their child to participate, was given 25 \$. We received 78% of the slips back, with 57% of the parents agreeing to let their child participate.

All of the children that participated completed the questionnaires during school. The 2nd and 3rd grade students had the questions read to them to ensure comprehension, while the older children simply filled out the questionnaires on their own.

Parents were then sent questionnaires to fill out and mail back to us. As an added incentive, all parents received 10 \$ if they mailed the questionnaires back to us, and 49 % of the parents returned their questionnaires. We then computed One-Way ANOVAs to compare the children whose parents did and did not complete the parent ratings on child self reports of attachment, communication, emotional functioning, self esteem, and interpersonal relations. There were no significant differences indicating that children whose parents did not complete the parent reports were not significantly different from children whose parents did participate in the parent component of the project on these variables of interest.

Measures:

Parent-Adolescent Communication Scale (PACS). The Parent-Adolescent Communication Scale, PACS, (Barnes and Olson, 1982) was completed by the children in order to assess the quality of communication between parents and children. The scale contains 20 questions and has been found to be internally consistent, $\alpha = .87$ (Barnes & Olson, 1982). Answers are given based on a 5-point Likert scale: 5 = strongly disagree, 1 = strongly agree. After the reversal of negatively scored items, lower scores denote poorer communication, while higher scores denote more adaptive communication.

Inventory of Parent and Peer Attachment (IPPA). The parent attachment section of The Inventory of Parent and Peer Attachment, IPPA, (Armsden and Greenberg, 1987)

was completed by the children in order to assess the quality of attachment between parents and children. The inventory contains 28 questions and has been found to be internally consistent, $\alpha = .89$ (Armsden & Greenberg, 1987). Answers are given based on a 5-point Likert scale: 1 = almost never or never, 5 = almost always or always. After the reversal of negatively scored items, lower scores denote poorer attachment, while higher scores denote more adaptive attachment.

Matson Evaluation of Social Skills in Youngsters (MESSY). The Matson Evaluation of Social Skills in Youngsters, MESSY, (Matson et al, 1983), was completed by the parents in order to assess their children's overall social behavior. The scale contains 62 items and has been to be internally consistent, $\alpha = .93$. Answers are given based upon a 5-point Likert scale: 1 = almost never or never, 5 = almost always or always. After the reversal of negatively scored items, lower scores denote poorer social behavior, while higher scores denote more adaptive social behavior.

Emotional Symptoms Index (ESI). The Emotional Symptoms Index, ESI, an overall composite score of the Behavior Assessment System for Children, BASC, (Reynolds and Kamphaus, 1992), was completed by the children in order to assess their overall level of problematic emotional functioning. The ESI contains 7 subscales; anxiety, atypicality, social stress, depression, sense of inadequacy, interpersonal relations, and self-esteem, comprising a total of 74 true-false items. The ESI has a high internal-consistency reliability, $\alpha = .96$, and a high test-retest reliability, $\alpha = .84$. This scale has been used numerous times in both school and clinical settings and has been shown to be

positively received by children, parents, and teachers, (Sandoval and Echandia, 1994; Flanagan, 1995)

Child Behavior Checklist (CBCL). The Child Behavior Checklist, CBCL (Achenbach, 1991) was completed by parents in order to assess overall psychopathology. The Checklist provides scores for total competence, 3 competence scales, total problems, internalizing, externalizing, and 8 syndrome scales. The CBCL is internally consistent and 15-day test-retest reliability; concurrent and discriminative validity are reported in the CBCL test manual (Achenbach, 1991). For the purposes of this study however, only scores from the total problems scale, internalizing scale, externalizing scale, social competence scale, and social problems scale were used.

Results

Plan of Analysis

Simple Regressions were first used to determine whether or not attachment and communication quality predict overall psychopathology, social maladjustment, emotional maladjustment, and self-esteem. Simple regressions were chosen over multiple regressions because of the large correlation between attachment and communication quality which resulted in multicollinearity, $r(42) = .78, p < .01$.

Next, in order to directly compare children with extreme scores on attachment and communication quality, categorical variables were created. The communication scores were transformed into z scores and then split up into two groups; the first group comprising z scores that are above the mean ($N = 24$), the second group comprising z scores that are below the mean ($N = 18$). Based on the procedures outlined in Armsden

and Greenberg (1987), the attachment scores were divided into two groups, high security ($N = 27$) and low security ($N = 12$). The number of children that were divided into these two groups was in accordance with the numbers that Armsden and Greenberg found, (high security $N = 31$, low security $N = 26$). In addition, 3 children in our sample did not fall into either the high or low security group and were not considered in these analyses.

In addition, a categorical variable representing the cumulative effects of attachment and communication quality was created. Children who were in the low security group and had communication scores that were below the mean were classified as the low attachment and communication group ($N = 10$). Children who were in the high security group and had communication z scores that were above the mean were classified as the high attachment and communication group, ($N = 12$). (Descriptive statistics are shown in Table 1)

General Psychopathology:

Simple Regressions were used to determine whether or not self-reported scores on the IPPA and PACS predicted parent-reported scores on the CBCL's Internalizing, Externalizing, and Total Problem scales. Scores from the CBCL's Total Problems scale were significantly predicted by both communication quality $R^2(21) = .18$, $p < .05$, and attachment quality $R^2(21) = .20$, $p < .05$. Scores from the Externalizing Scale were significantly predicted by communication quality, $R^2(21) = .21$, $p < .05$, and were moderately predicted by attachment quality, $R^2(21) = .15$, $p = .07$. Finally, scores from the Internalizing Scale were moderately predicted by attachment quality, $R^2(21) = .17$,

$p = .06$, but not by communication quality, $R^2(21) = .12$, $p > .05$. (see Figure 1 for regression lines)

2 x 2 ANOVAs were then used to determine whether or not children differed on scores from the CBCL's Total Problems scale, the Internalizing scale, and the Externalizing scale, depending upon their attachment and communication classification. As shown in Figure 2, for scores from the Internalizing scale, the interaction was not significant, $F(1,15) = .87$, $p > .05$, and neither was the main effect for communication, $F(1,15) = .40$, $p > .05$, but there was a moderate main effect for attachment, $F(1,15) = 4.15$, $P = .06$. Scores from the Total Problems: the interaction was not significant, $F(1,15) = 1.51$, $p > .05$, and neither was the main effect for attachment, $F(1,15) = 2.08$, $p > .05$, or communication, $F(1,15) = .15$, $p > .05$. Scores from the Externalizing scale: the interaction was not significant, $F(1,15) = 1.56$, $p > .05$, and neither was the main effect for attachment, $F(1,15) = .36$, $p > .05$, or for communication, $F(1,15) = .85$, $p > .05$. (see Table 2 for all results of 2 x 2 ANOVAs)

Finally, One-Way ANOVAs was used to determine whether or not children classified as both low security and low communication differ in their scores on the CBCL's Total Problems scale, Internalizing scale, and Externalizing scale, from children classified as both high security and high communication. As shown in Figure 3, there was a moderately significant difference between these two groups regarding scores from the Total Problems scale, $F(1,12) = 4.57$, $p = .05$, and scores from the Externalizing scale, $F(1,12) = 3.18$, $p = .10$. While there was not a significant difference with scores from the

Internalizing scale, $F(1,12) = 3.02$, $p = .11$, the trend was in the same direction. (see Table 3 for results of One-Way ANOVAs)

Social Competence:

Simple Regressions were used to determine whether or not parent reports of social competence and social problems, (as measured by the CBCL), self-reports of Interpersonal Problems, (as measured by the ESI), and parent-reports of overall social behavior, (as measured by the MESSY) are predicted by attachment and communication quality. Scores from the Interpersonal Problems Scale were significantly predicted by communication quality, $R^2(41) = .12$, $p < .05$, and by attachment quality, $R^2(41) = .16$, $p < .05$. Scores from the CBCL's Social Problems scale were significantly predicted by communication quality, $R^2(21) = .21$, $p < .05$, and by attachment quality, $R^2(21) = .25$, $p < .05$. Scores from the CBCL's Social Competence scale were moderately predicted by both communication quality, $R^2(41) = .14$, $p = .08$, and attachment quality, $R^2(41) = .14$, $p = .08$. Scores from the MESSY were not significantly predicted by either attachment, $R^2(21) = .06$, $p > .05$, or communication quality, $R^2(21) = .06$, $p > .05$. (see Figure 3 for regression lines)

2 x 2 ANOVAs were next used to determine whether or not children differed on scores from the CBCL's Social Competence scale, Social Problems scale, the MESSY, and the ESI's Interpersonal scale, depending upon their attachment and communication classification. As shown in Figure 4, for scores from the CBCL's Social Problems scale, the interaction was not significant, $F(1,15) = .13$, $p > .05$ and neither was the main effect for communication, $F(1,15) = 1.14$, $p > .05$, but there was a moderately significant main

effect for attachment, $F(1,15) = 3.16, p = .09$. Scores from the CBCL's Social Competence scale: the interaction was not significant, $F(1,15) = .18, p > .05$, and neither was the main effect for attachment, $F(1,15) = 1.74, p > .05$, or the main effect for communication, $F(1,15) = .17, p > .05$. Scores from the MESSY: the interaction was not significant, $F(1,15) = .22, p > .05$, and neither was the main effect for attachment, $F(1,15) = .02, p > .05$, or the main effect for communication, $F(1,15) = .22, p > .05$. Scores from the ESI's Interpersonal scale: the interaction was not significant, $F(1,15) = .52, p > .05$, and neither was the main effect for attachment, $F(1,15) = .77, p > .05$, or the main effect for communication, $F(1,15) = .63, p > .05$. (see Table 2 for results of 2 x 2 ANOVAs)

Finally, One-Way ANOVAs were used to determine whether or not children classified as both low security and low communication differ in their scores on the CBCL's Social Competence scale, Social Problems scale, the MESSY, and the ESI's Interpersonal scale, from children classified as both high security and high communication. As shown in Figure 4, there was a significant difference between these two groups regarding scores from the Social Problems scale, $F(1,12) = 8.57, p < .05$, and moderately significant difference both with scores from the Social Competence scale, $F(1,12) = 4.03, p = .07$, and the ESI's Interpersonal scale, $F(1,28) = 3.91, p = .06$, but there was not a significant difference with scores from the MESSY, $F(1,12) = .36, p > .05$. (see Table 3 for results of One-Way ANOVAs).

Emotional Competence:

Simple Regressions were used to determine whether or not self-reports of emotional functioning (as measured by the ESI), and self-reports of self-esteem (subscale of the

ESI) are predicted by attachment and communication quality. As shown in Figure 5, scores from the ESI were significantly predicted by both attachment quality, $R^2(41) = .28$, $p < .001$, and communication quality, $R^2(41) = .25$, $p < .001$. Scores from the self-esteem scale were significantly predicted by both attachment quality, $R^2(41) = .14$, $p < .05$, and communication quality, $R^2(41) = .14$, $p < .05$.

2 x 2 ANOVAs were then used to determine whether or not children differed on scores from the ESI and the ESI's Self-Esteem scale, depending upon their attachment and communication classification. As shown in Figure 6, for scores from the ESI, the interaction was moderately significant, $F(1,35) = 3.37$, $p = .07$ and there was a significant main effect for attachment, $F(1,35) = 5.09$, $p < .05$, but the main effect for communication was not significant, $F(1,35) = .03$, $p > .05$. For scores on the Self-Esteem scale, the interaction was not significant, $F(1,15) = .31$, $p > .05$, and neither was the main effect for attachment, $F(1,35) = 1.08$, $p > .05$, or the main effect for communication, $F(1,35) = .02$, $p > .05$. (see Table 2 for results of 2 x 2 ANOVAs)

Finally, One-Way ANOVAs were used to determine whether or not children classified as both low security and low communication differ in their scores on the ESI and the ESI's Self-Esteem scale, from children classified as both high security and high communication. As shown in Figure 6, there was a significant difference between these two groups regarding scores from the ESI, $F(1,28) = 7.56$, $p < .01$, but there was not a significant difference with scores from the Self-Esteem scale, $F(1,28) = 1.78$, $p > .05$. (see Table 3 for results of One-Way ANOVAs)

Discussion

Relationship between parent-child attachment and communication quality and child adjustment outcomes:

As expected we found that self-reports of parent-child attachment and communication quality were associated with parent reports of psychopathological symptoms. More specifically, we found that self-reports of both attachment and communication quality significantly predicted parent-reported scores from the Total Problems scale of the CBCL. In addition, children who were classified as low in both attachment and communication quality were reported by parents as having the highest scores on the total problems scale. Furthermore, our results suggest that both parent-child attachment and communication quality are related to parent reports of both internalizing and externalizing symptoms.

In light of ample research testifying to the importance that adaptive parent-child attachment and communication patterns have for optimal development, our findings are not surprising. Consistent with previous research, specific links between attachment and subsequent internalizing and externalizing symptoms (Allen et al, 1998; Kobak et al, 1991; Allen et al, 1998), and overall behavioral problems (Lyons-Ruth et al, 1993; Rothbaum et al, 1995; Erickson et al, 1985) have been found. As a general consensus, children who are insecurely attached typically display more psychopathological symptoms than children who are securely attached.

Research surrounding the importance of adaptive parent-child communications for optimal development is equally compelling. Children who endorse more internalizing and externalizing symptoms typically come from families who engage in unsupportive communications and who negatively express their emotions, (Bronstein et al, 1993). Furthermore, communication quality, specifically supportive communication, has been found to be associated with self-esteem (Gecas & Schwalbe, 1986; Hoelter & Harper, 1987) and problematic behavior (McCubbin et al, 1985; Barnes et al, 1986). In general, adolescents who adaptively communicate with their parents tend to have a closer bond with each other, are more flexible and understanding, and are more satisfied with their family life (Barnes & Olson, 1985; Noller, 1995).

It is important to emphasize however, that while there was a significant relationship between parent-child attachment and communication quality and scores from the Total Problems scale, the case was not as clear when psychopathology was broken down into internalizing and externalizing symptoms. For example, while communication quality significantly predicted parent reported externalizing symptoms it did not predict parent reported internalizing symptoms. In addition, attachment quality was only moderately predictive of parent reported internalizing and externalizing symptoms. Furthermore, the direct comparison of children with extreme scores on attachment and communication quality yielded the same types of results. Children classified as low in attachment quality tended to display more internalizing symptoms than children classified as high in attachment quality. In addition, children classified as low in both attachment and

communication quality tended to display the highest levels of both internalizing and externalizing symptoms.

It should be noted however, that all of the items comprising both the internalizing and externalizing scales are also used for the assessment of total problems. More specifically, of the 124 items comprising the total problems scale, 32 of those items comprise the internalizing scale, while 33 of those items comprise the externalizing scale. Therefore, the probability of detecting significant effects would be lower when assessing internalizing and externalizing symptoms than for the assessment of total problems. Of additional relevance is our low sample size, particularly regarding parent data. Of the 42 children that participated only 22 of their parents returned the questionnaires. It is probable therefore that we simply did not have enough power to detect to all significant effects.

Taking these limitations into account, further exploration of our results suggests that attachment quality is particularly related to internalizing symptoms while communication quality is particularly related to externalizing symptoms. Support for attachment being a better predictor of internalizing symptoms than of externalizing symptoms has been supported by previous research (McLeister & Douglas, 1999; Booth et al, 1994), but the case is not as clear for the selective predictive power of communication quality. As suggested by Booth et al (1994), it is possible that externalizing behavior is influenced more by actual parent-child interactions, while internalizing behavior is influenced more by the attachment relationship.

When examining the relationship between parent-child attachment and communication quality and social adjustment, our hypotheses were again supported. We found that self-reports of attachment and communication quality were related to both self and parent reports of social maladjustment. In accordance with previous research, both parent-child attachment and communication quality are suggested to greatly influence children's social development. Securely attached children typically exhibit better self-control, (Egeland et al, 1983) and are more compliant with teachers (Erickson & Crichton, 1981; Erickson et al, 1982). Perceptions of attachment quality have also been found to be related to social competence (Kenny & Donaldson, 1991) and expectations of support (Larose & Boivin, 1998). In addition, children who communicate adaptively with their parents tend to develop better social skills (Ward et al, 1988; Noller, 1995) have a higher social competence (Beckwith & Cohen, 1989) and typically display less behavioral problems (Goldberg et al, 1989) than children who communicate poorly with their parents.

However, our results become more complex when each measure of social adjustment was looked at separately. Perhaps the most unexpected finding was the absence of a significant relationship between either attachment or communication quality and scores from the MESSY. The MESSY evaluates the overall quality of children's social skills. Our results therefore are contrary to findings suggesting that children who have inadequate social skills tend to be more insecurely attached and to communicate more poorly with their parents.

In conjunction with our hypotheses however, all other measures of social adjustment (interpersonal problems, social competence, and social problems) were related to both attachment and communication quality. It is possible that attachment and communication quality affect different aspects of social adjustment.

Looking first at the Social Competence scale, these scores were moderately predicted by parent-child attachment and communication quality and were marginally lower in children classified as low in both attachment and communication quality. While none of the analyses regarding social competence were statistically significant, the notable trend in the data lends further support to our hypotheses.

More convincingly, scores from the interpersonal Problems Scale were significantly predicted by parent-child attachment and communication quality and were marginally higher in children classified as low in both attachment and communication quality. The Interpersonal Problems scale is a self-report measure used to assess how successful and satisfied children feel in social situations. Our results suggest therefore that children who communicate more adaptively and who are more securely attached tend to have more adaptive perceptions of their own social relations. In conjunction with previous research linking self-perceived social adjustment to both attachment (Bost et al, 1998) and communication quality (Beckwith & Cohen, 1989), these results are not surprising.

Lastly, we found that scores from the Social Problems scale were significantly predicted by both parent-child attachment and communication quality and were significantly higher in children classified as low in both attachment and communication quality. Our results suggest that children who are more poorly attached and who

communicate more poorly with their parents display more social problems. Likewise our results are supported by previous research showing that more supportive and adaptive parental communications are positively associated with social adjustment and negatively related to deviant and delinquent attitudes (Noller & Callan, 1990; Barnes & Farrell, 1992; Farrell & Barnes, 1993), while attachment security is related to overall friendship quality (Zimmermann et al, 1996).

Furthermore, all items comprising the Social Problems scale were also used to assess Total Problems. In particular, of the 124 items assessing total problems, 8 of those items are used to assess social problems. Therefore, in combination with our low parent sample size, our results strongly suggest that both parent-child attachment and communication quality are related to social problems.

The variability in our assessment of social adjustment is somewhat surprising. As stated previously our low sample size probably hindered the detection of significant findings; however, there are other possible explanations. For example, it is possible that attachment and communication quality are associated more with perceived social competence as opposed to overall social behavior; or, that parent-child attachment and communication quality are associated more with distinct social problems as compared to basic social skills. However, while variability in our measures exists, overall, our hypothesis that children who are more poorly attached and who communicate more poorly will display more signs of social maladjustment, was supported.

Focusing lastly on emotional adjustment, our hypotheses were again supported. Both attachment and communication quality significantly predicted self-reported scores on the

ESI and the Self-Esteem scale. Furthermore, children who were classified as low in both attachment and communication quality reported the most emotional maladjustment. Our results suggest that children who are more poorly attached and who communicate more poorly with their parents display more emotional maladjustment, and in particular, display a more impaired self-esteem. In conjunction with previous research, attachment has been found to be related to numerous aspects of emotional functioning (Noller, 1995; Kenny et al, 1993; Holahan et al, 1994), such as interpersonal dependency and self-esteem (Parker et al, 1979). In addition, Rice (1990), after the completion of a meta-analysis of studies involving attachment and subsequent adjustment, concluded that self-esteem / self-concept was most clearly related to attachment. Likewise, numerous links between parent-child communication quality and emotional functioning, specifically self-esteem, have been found (Kernis et al, 2000; Coopersmith, 1967; Buri et al, 1988; Grolnick & Ryan, 1989).

Of particular interest, our results derived from the direct comparison of children with extreme scores on attachment and communication quality and emotional functioning yielded somewhat surprising findings. As mentioned previously, children classified as low in both attachment and communication reported the most emotional maladjustment. However, while children classified as low in attachment reported significantly more emotional maladjustment than children classified as high in attachment, there was also a moderate interaction effect between attachment and communication quality and emotional maladjustment. Children classified as low in attachment but high in communication reported the most emotional maladjustment ($M = 62.25$) while children

classified as high in both attachment and communication reported the least amount of emotional maladjustment ($M = 47.73$). Furthermore, there was relatively little difference between children classified as low in both communication and attachment ($M = 56.35$) as opposed to children classified as low in communication but high in attachment ($M = 54.86$). It is possible that insecurely attached children who engage in relatively adaptive communications with their parents are confused by this inconsistency. Again however, this interaction effect was only moderately significant. In general, our results suggest that children who are more poorly attached and who engage in poorer communication patterns display more emotional maladjustment.

Overall, all of our hypotheses were supported. Children who are more poorly attached and who communicate more poorly with their parents displayed more psychopathological symptoms, and in particular, more emotional and social maladjustment, than children who were more securely attached and who communicated more adaptively with their parents.

Implications for Psychological Maltreatment Research

In accordance with theories surrounding developmental psychopathology (Cicchetti, 1984, 1993) one of our goals for this study was to better understand the development of an abnormal population of children by first examining conditions surrounding a normal population. More specifically, we examined how the quality of the parent-child relationship was related to various adjustment outcomes in a normal sample of children in order to help determine what these adjustment outcomes would look like in a psychologically maltreated sample of children.

Furthermore, because we were interested in implications for psychological maltreatment research, attachment and communication quality were chosen to describe the parent-child relationship because both are suggested to be major contributing factors to the development of psychological maltreatment. Thus, our goal was to learn more about adjustment outcomes in a population of psychologically maltreated children by examining the relationship between attachment and communication quality to adjustment outcomes in a normal population of children.

Our results, in accordance with previous literature, testify to the importance that adaptive attachment and communication patterns have for optimal development. Even in a small and normal population of children, both parent-child attachment and communication quality were significantly related to numerous adjustment and behavioral measures. More specifically, our results suggest that children who are psychologically maltreated will tend to display high levels of psychopathology, and in particular, high levels of social and emotional maladjustment.

In accordance with our results surrounding scores from the CBCL's total problems scale, internalizing scale, and externalizing scale, we would expect more variability in the endorsement of internalizing and externalizing symptoms in a population of psychologically maltreated children because social and emotional adjustment are what is suggested to be primarily affected. Furthermore, our findings suggest that the association between attachment and communication quality and subsequent social and emotional functioning is stronger than the association between attachment and communication quality and subsequent internalizing and externalizing symptoms. In accordance with

previous research, while psychologically maltreated children have been found to endorse more internalizing and externalizing symptoms (Ammerman et al, 1986; Cicchetti & Carlson, 1989; Star & Wolfe, 1991), these symptoms are typically related to impaired social and emotional development (Conaway & Hansen, 1989; Salzinger et al, 1993; Weiss et al, 1992; Engles & Moisan, 1994; Youngblade & Belsky, 1989).

However, the association we found between parent-child attachment and communication quality and child-endorsed social and emotional functioning was not completely straightforward. Thus, our results further suggest that the relationship between attachment and communication quality and subsequent social and emotional adjustment is complex. Likewise psychological maltreatment is multifaceted and the relationship between psychological maltreatment and subsequent social and emotional functioning is variable.

A possible explanation for the variability we observed in social and emotional outcome measures could in part be explained by differences between perceived and actual attachment and communication quality. For example, some children may perceive their relationships with their parents as being more adaptive than they actually are. In accordance with this view, maltreatment research suggests that children's perceptions of their parent's abusive actions are related to subsequent negative outcomes, (Navarre, 1987).

Furthermore, the contributions of attachment and communication quality to subsequent adjustment are dependent upon a variety of factors, (i.e. personality of both the child and parent, various environmental factors, cultural rules and expectations).

Thus, while attachment and communication quality are suggested to contribute to the development of psychological maltreatment, their specific contributions can greatly vary.

In conclusion, the implications that our results have for psychological maltreatment research rests on three main assumptions: that both parent-child attachment and communication quality are (1) important for optimal development, (2) a good way to assess parent-child relationships, specifically abusive parent-child relationships, (3) major contributing factors to the development of psychological maltreatment. In adherence to these assumptions, our results suggest that psychologically maltreated children would display a variety of psychopathological symptoms; but specifically, they would display social and emotional maladjustment.

Limitations and Future Considerations

As previously mentioned, our low sample size, particularly our low parent sample size, probably hindered the detection of significant findings. Furthermore, when children were divided into groups, (i.e. low attachment vs high attachment and low communication vs high communication), we lost more statistical power. This probably helps to explain why so many of our simple regression were significant while many of the main effects observed in our 2 x 2 ANOVAs were not.

In addition, we did not consider effects due to gender differences. Past research has shown that females are more prone to developing internalizing symptoms while males are more likely to exhibit externalizing symptoms (Achenback, 1991; Dohrenwend & Dogrenwend, 1975). Therefore, our results could have been skewed by this potential relationship. Also, we assessed attachment and communication quality by self-report

only. Discrepancies in self vs parent reports are not uncommon (Loeber et al, 1990; Routh, 1990; Achenback et al, 1987), and it is possible that we could have obtained more accurate assessments of attachment and communication quality if we had used both self and parent reported measures.

In regards to the suggestion that attachment and communication patterns are a good way to assess the parent-child relationship, more research in general is needed to further explore the validity of this assessment technique. For example, it is possible that while attachment and communication quality explain a significant amount of variance associated with the overall quality of the parent-child relationship, there are other factors that could contribute. Likewise, it may be more beneficial to examine parent-child interactions in a more global manner, as opposed to assessing only communication quality.

Furthermore, while our results have implications for psychological maltreatment research, it necessary to next examine parent-child attachment and communication quality in a clinically-referred sample of psychologically maltreated children. Likewise, in a clinically referred sample we could directly assess the relationship between attachment and communication quality and subsequent social and emotional maladjustment.

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Table 1

Descriptives

Variables	N	Min	Max	M	SD
CBCL Total Problems	22	26	67	49.18	9.93
CBCL Internalizing	22	34	64	48.45	8.89
CBCL Externalizing	22	30	70	48.90	10.06
CBCL Social Problems	22	0	4	1.68	1.39
CBCL Social Competence	22	2.33	10	6.51	1.98
ESI Emotional Maladjustment	42	38	74	52.35	9.36
ESI Interpersonal Problems	42	42	78	52.62	10.23
ESI Self-Esteem	42	43	78	49.80	10.06
MESSY Overall Social Skills	22	1.86	4.72	3.86	.65
PACS Communication quality	42	1.95	4.80	3.46	.63
IPPA Attachment quality	42	2.11	4.86	3.74	.67

Table 2

Results from the 2 x 2 ANOVA

Interaction Effect		
	F	P
ESI Emotional Maladjustment	3.37	.07

Psychopathology	Main Effects for Attachment					
	Poor N = 6		Adaptive N = 13			
	M	SD	M	SD	F	P
CBCL Total Problems	54.5	8.24	47.15	8.23	2.08	.17
CBCL Internalizing Problems	55.17	8.45	46.92	7.97	4.15	.06
CBCL Externalizing Problems	52.50	10.21	47.54	9.21	.36	.57
CBCL Social Problems	2.83	1.33	1.15	.99	3.16	.09
CBCL Social Competence	5.11	1.97	7.15	1.94	1.74	.21
ESI Interpersonal Problems	55.75	12.05	50.48	8.00	.77	.39
MESSY Overall Social Behavior	3.81	.33	3.95	.79	.02	.88
ESI Emotional Maladjustment	57.33	9.37	49.57	7.80	5.09	.03
ESI Self-Esteem	52.54	12.71	47.85	7.89	1.08	.30

Psychopathology	Communication					
	Poor N = 10		Adaptive N = 12		F	P
	M	SD	M	SD		
CBCL Total Problems	53.33	8.51	46.00	7.75	.15	.70
CBCL Internalizing Problems	51.22	9.63	48.00	8.22	.40	.54
CBCL Externalizing Problems	53.78	10.34	44.90	6.76	.85	.37
CBCL Social Problems	2.33	1.32	1.10	1.10	1.14	.30
CBCL Social Competence	5.93	2.39	7.03	1.82	.17	.69
ESI Interpersonal Problems	55.52	10.06	49.45	8.51	.63	.43
MESSY Overall Social Behavior	3.75	.28	4.06	.90	.22	.65
ESI Emotional Maladjustment	55.74	8.88	49.05	8.04	.03	.86
ESI Self-Esteem	51.38	11.61	47.68	7.85	.02	.88

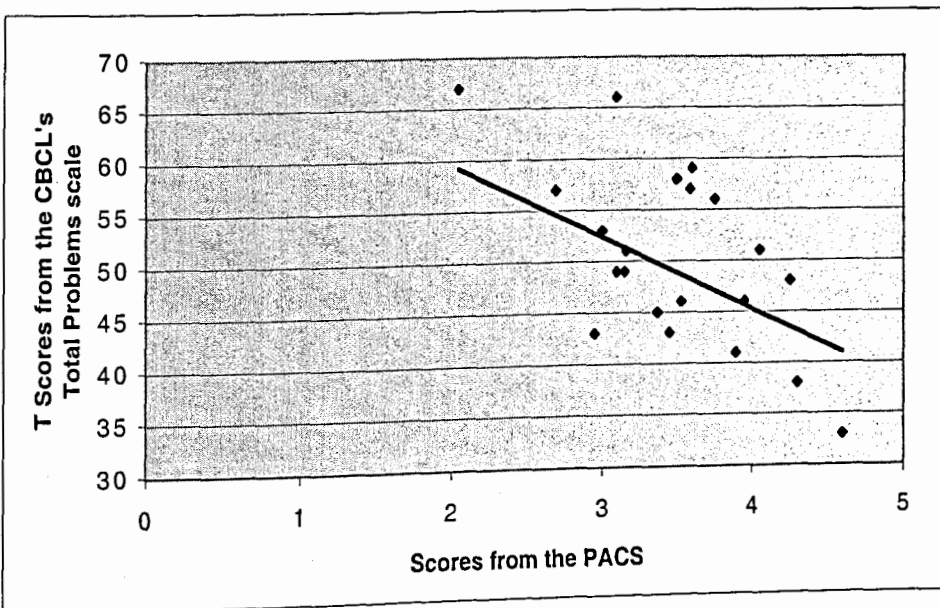
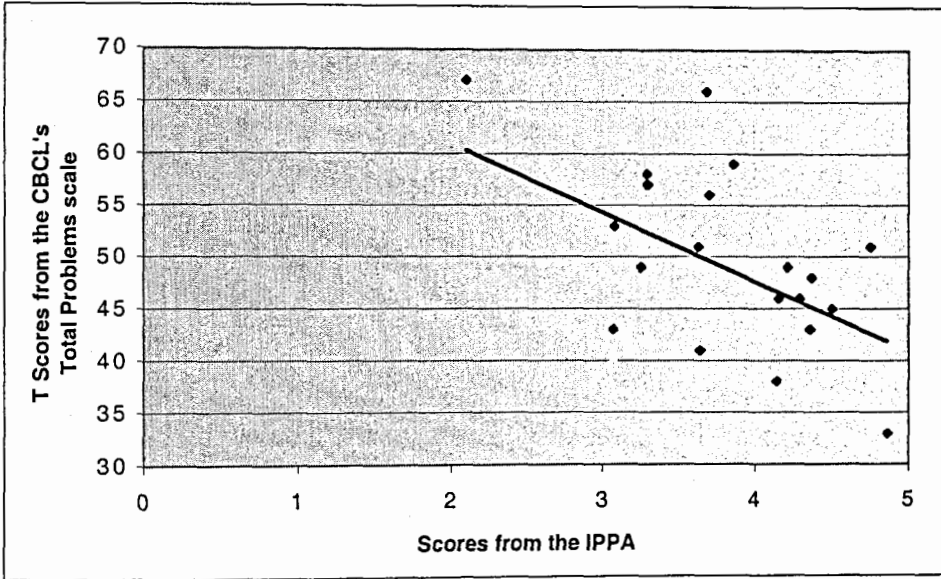
Table 3

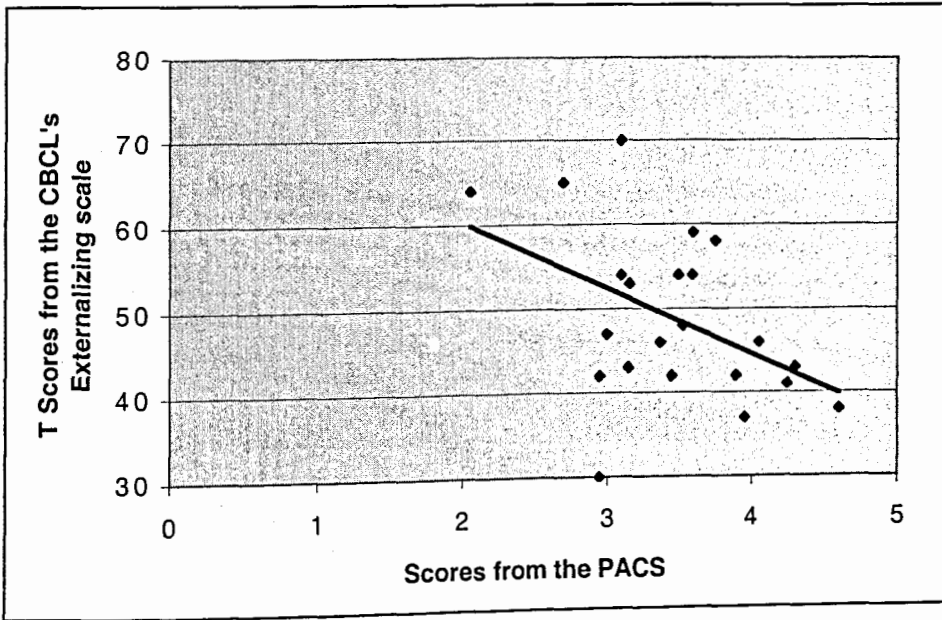
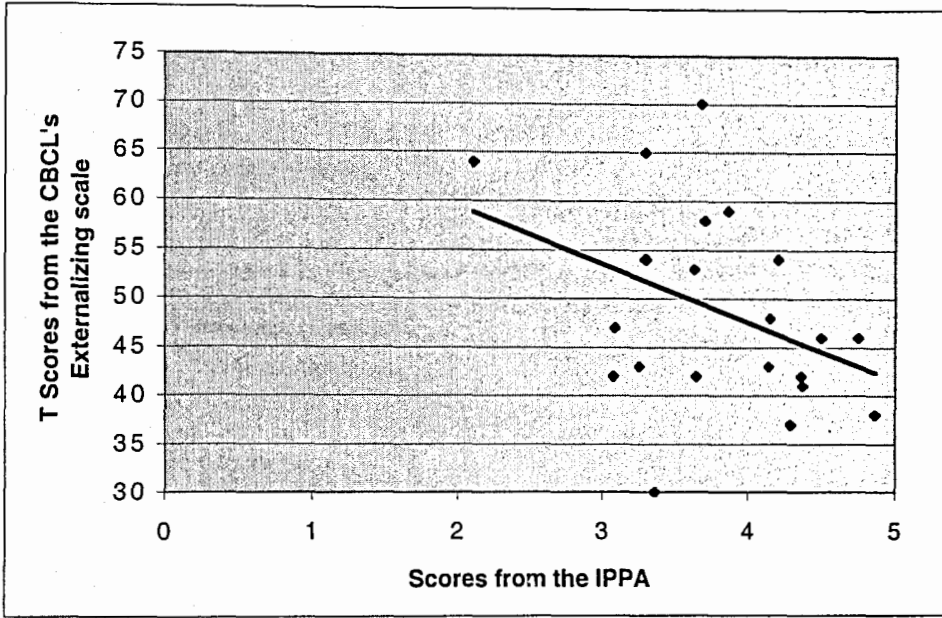
Results from the One-Way ANOVAs

Psychopathology	Low Attachment and Communication			High Attachment and Communication			T	P
	M	SD	N	M	SD	N		
CBCL Total Problems	53.8	9.01	5	44.67	6.89	9	2.14	.05
CBCL Internalizing Problems	53.8	8.67	5	46.44	6.98	9	1.73	.11
CBCL Externalizing Problems	52.20	11.39	5	43.89	6.31	9	1.78	.10
CBCL Social Problems	3.00	1.41	5	1.00	1.12	9	2.93	.01
CBCL Social Competence	4.93	2.14	5	7.15	1.89	9	-2.01	.07
ESI Interpersonal Problems	55.80	11.71	10	48.85	7.52	20	1.98	.06
MESSY Overall Social Behavior	3.82	.37	5	4.09	.96	9	-.60	.56
ESI Emotional Maladjustment	56.35	9.92	10	47.72	7.08	20	2.75	.01
ESI Self-Esteem	52.25	13.75	10	47.05	7.72	20	1.34	.19

Figure 1

Regression lines for the assessment of overall psychopathology





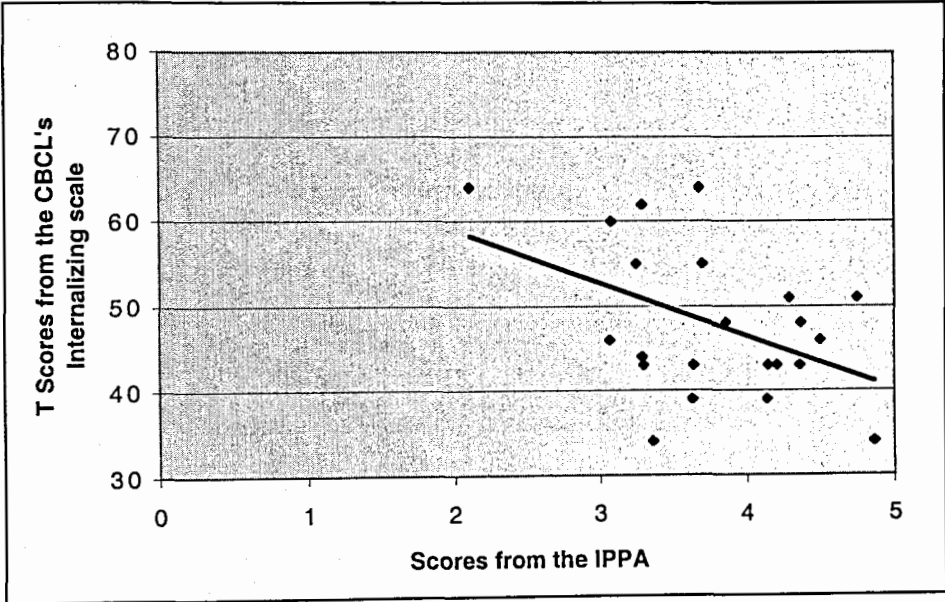
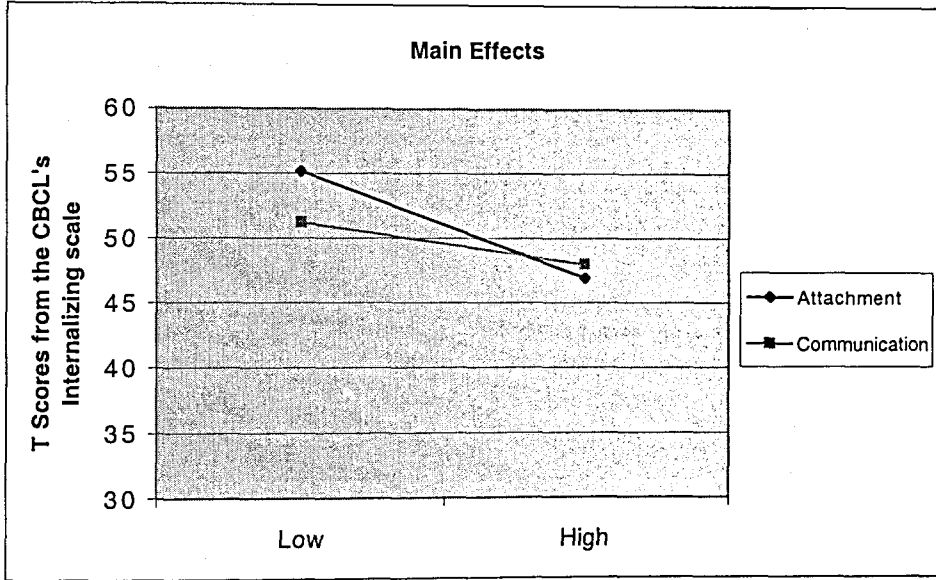


Figure 2

Differences observed in 2 x 2 ANOVA



Differences observed in One-Way ANOVAs

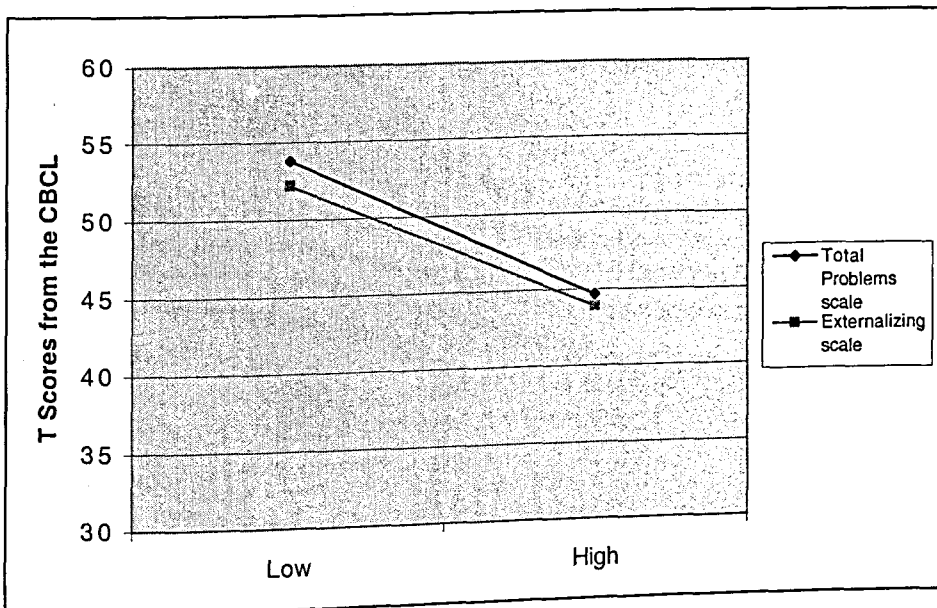
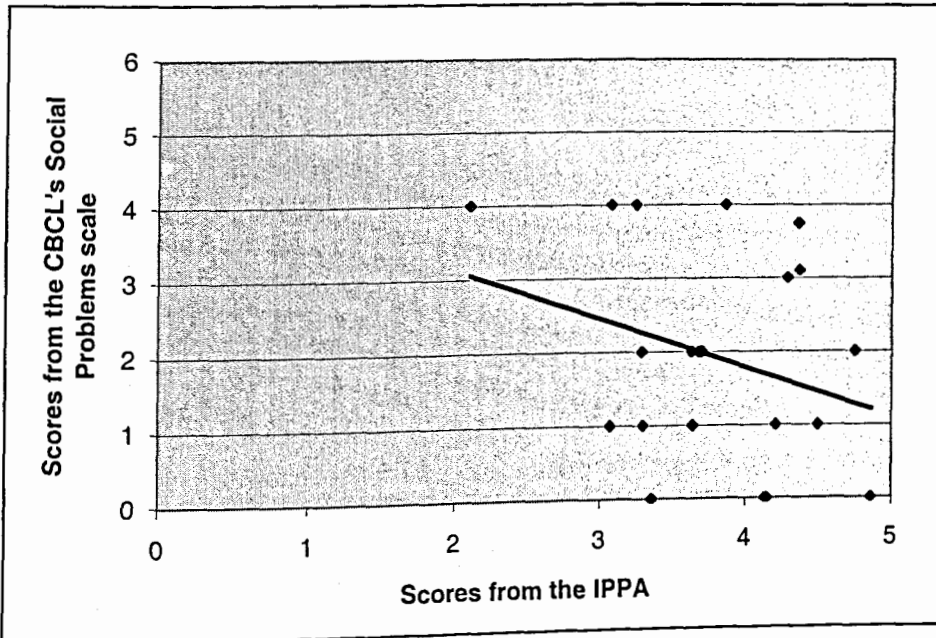
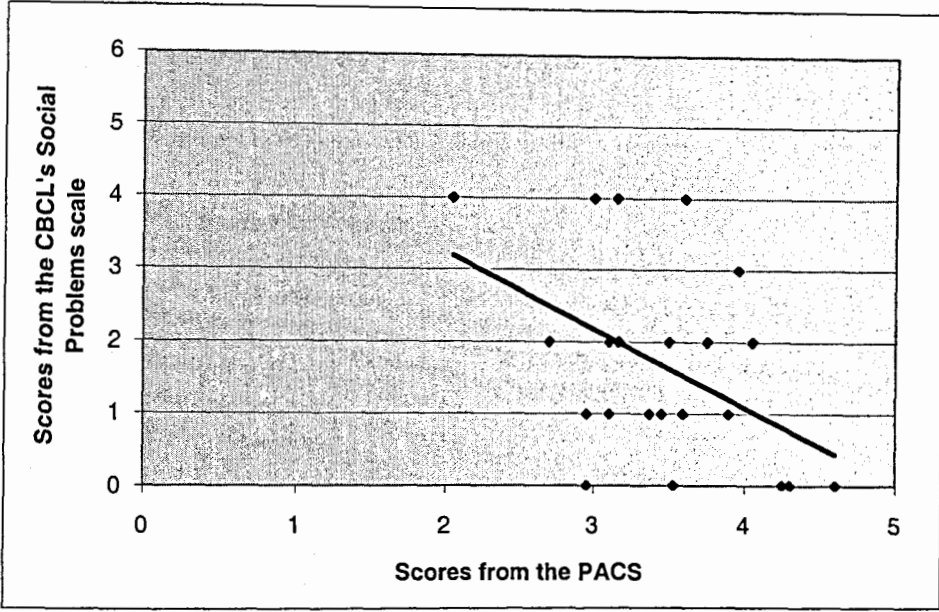
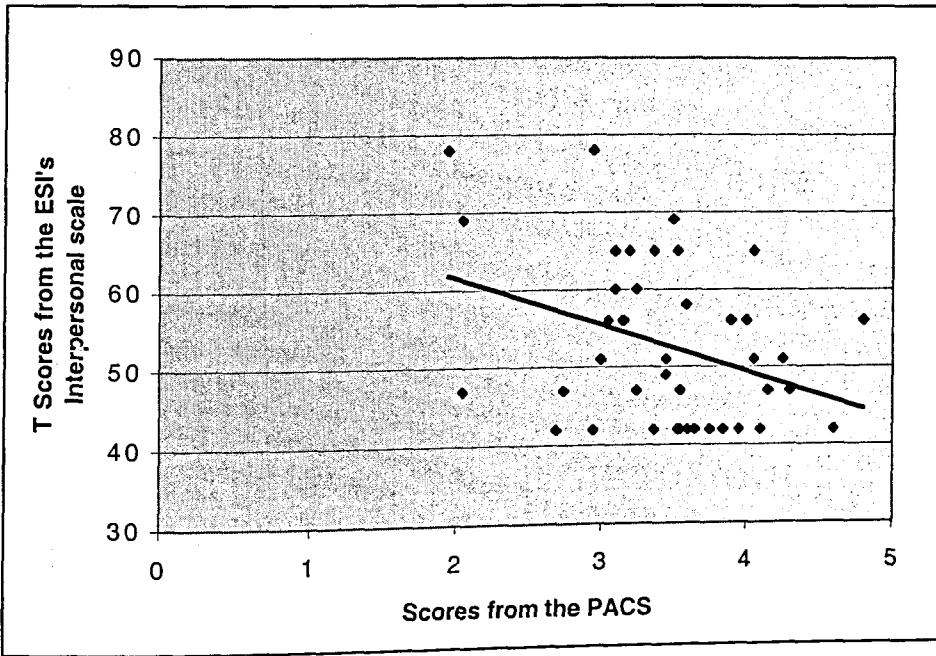
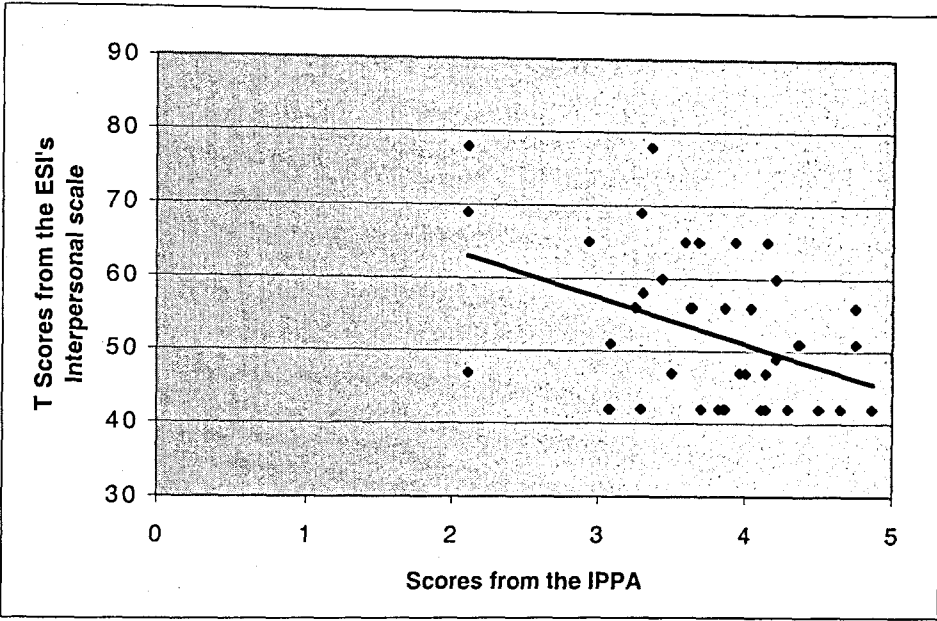


Figure 3

Regression lines for the assessment of social maladjustment





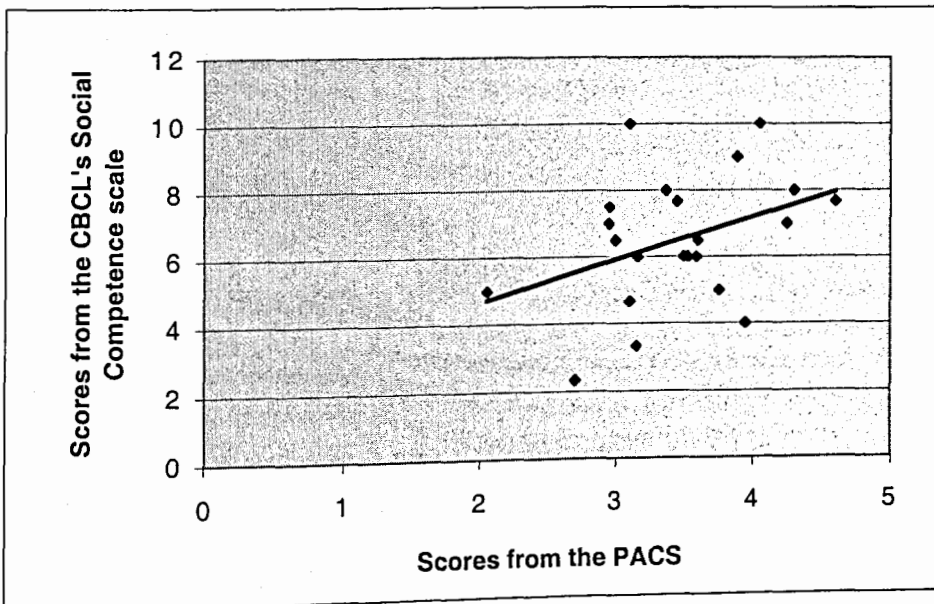
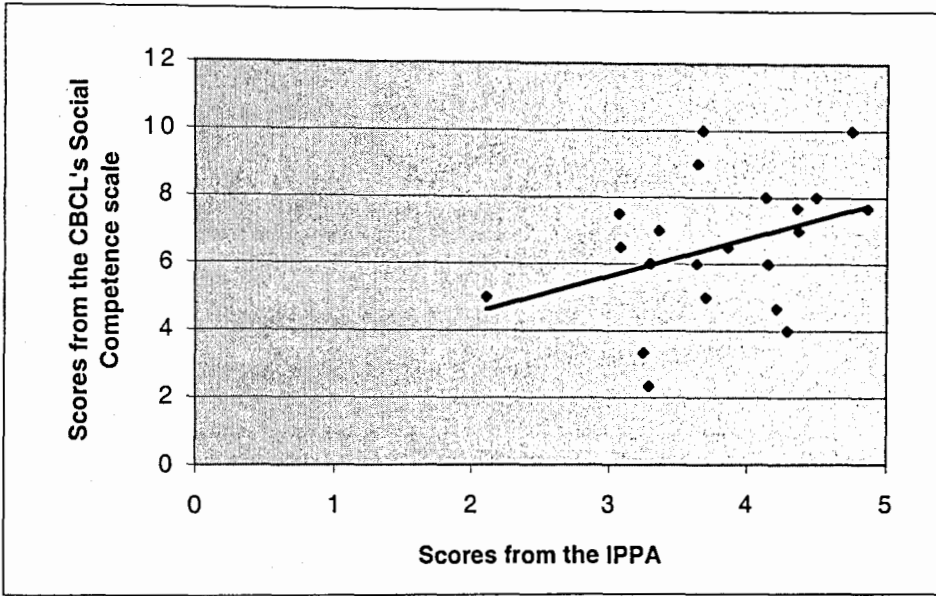
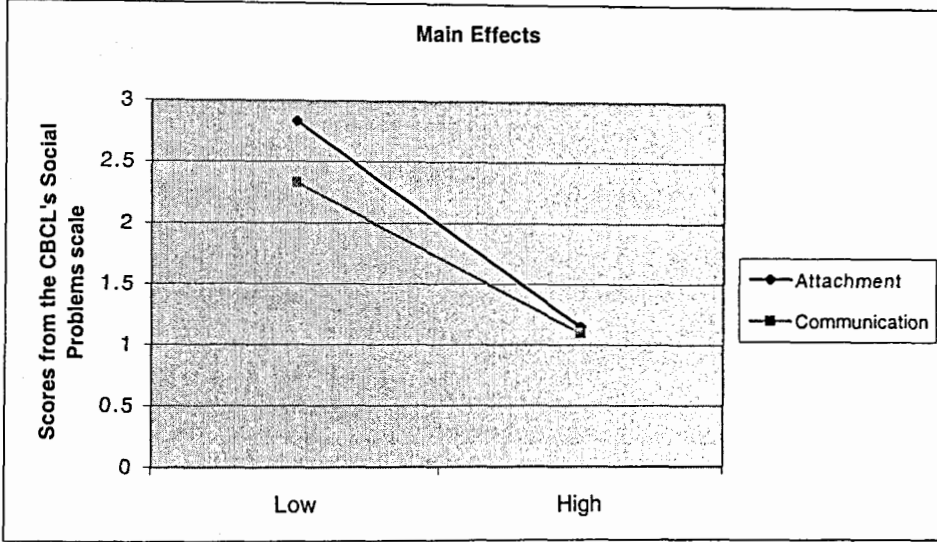
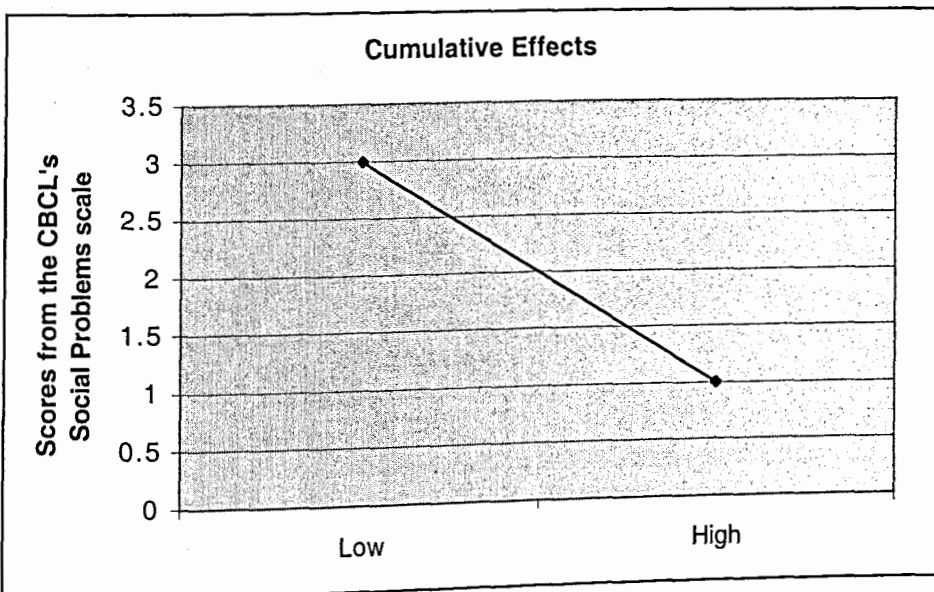


Figure 4

Differences in 2 x 2 ANOVAs



Differences in One-Way ANOVAs



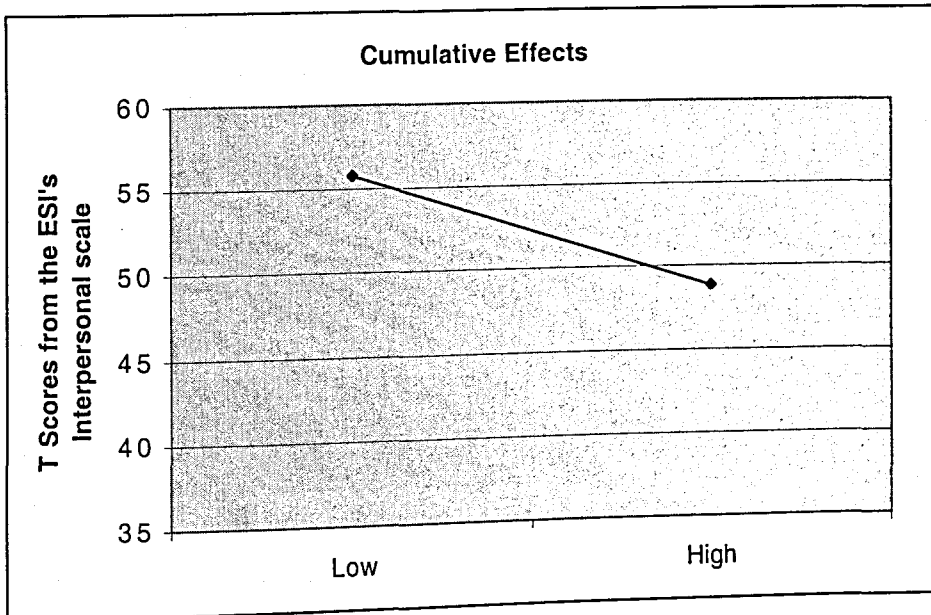
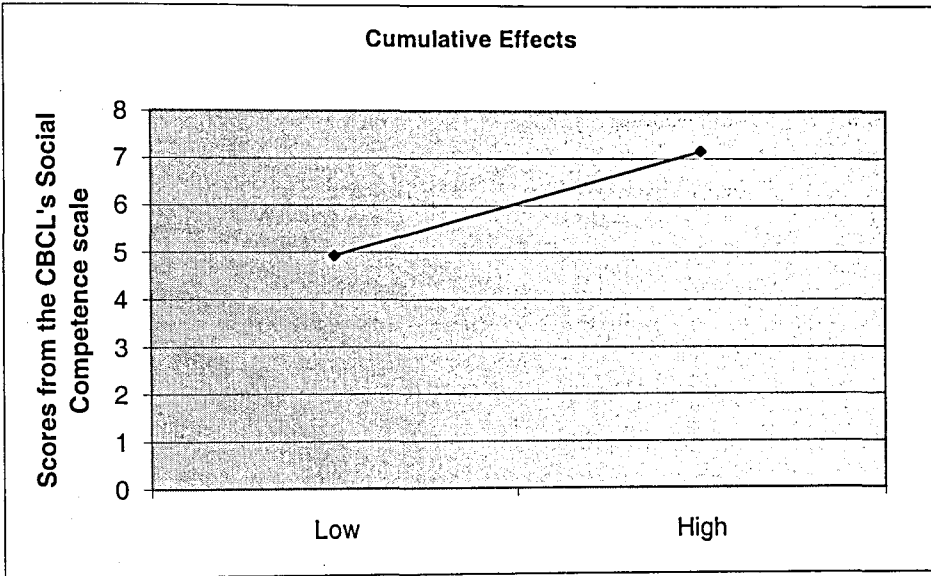
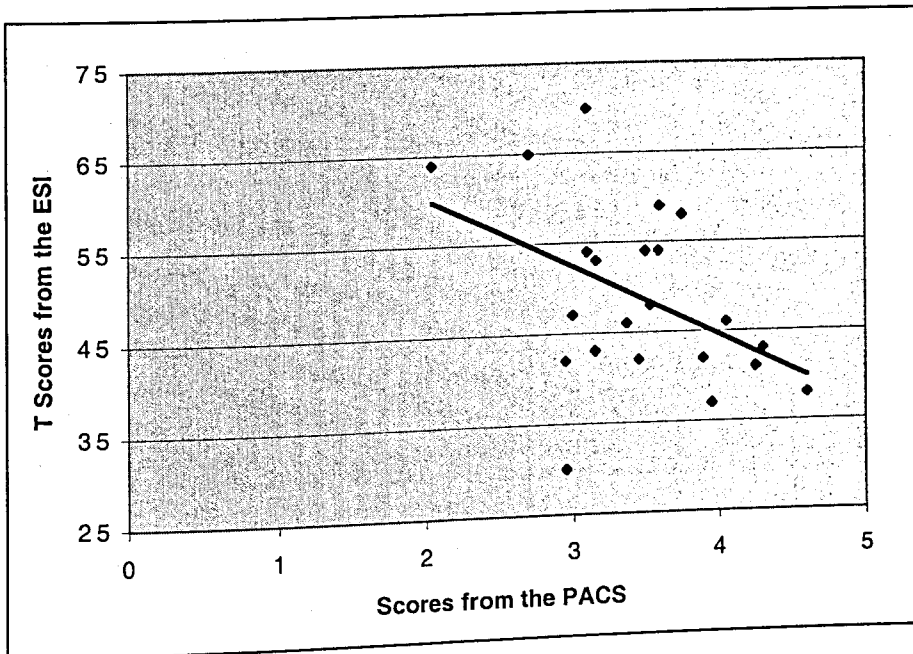
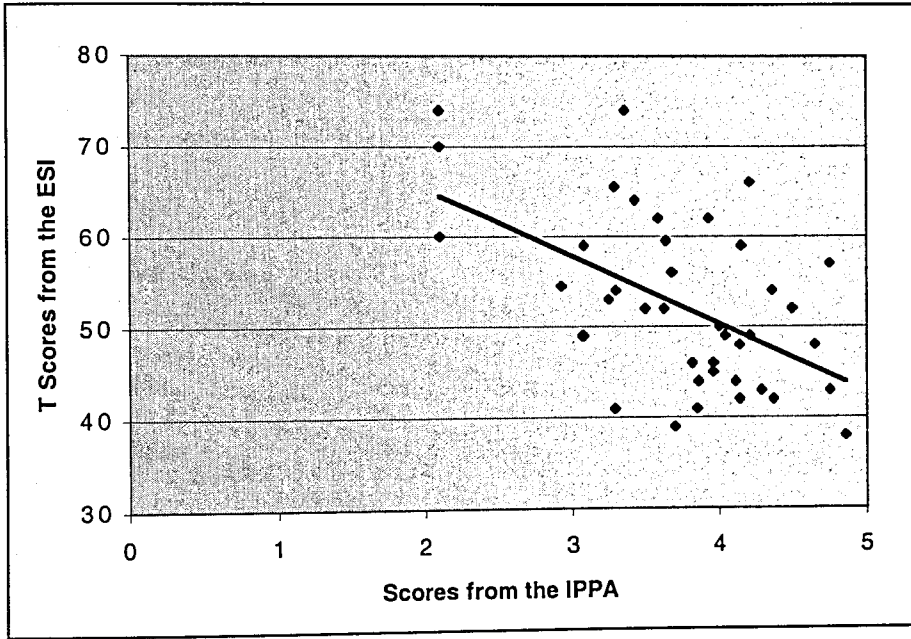


Figure 5

Regression lines for the assessment of emotional maladjustment



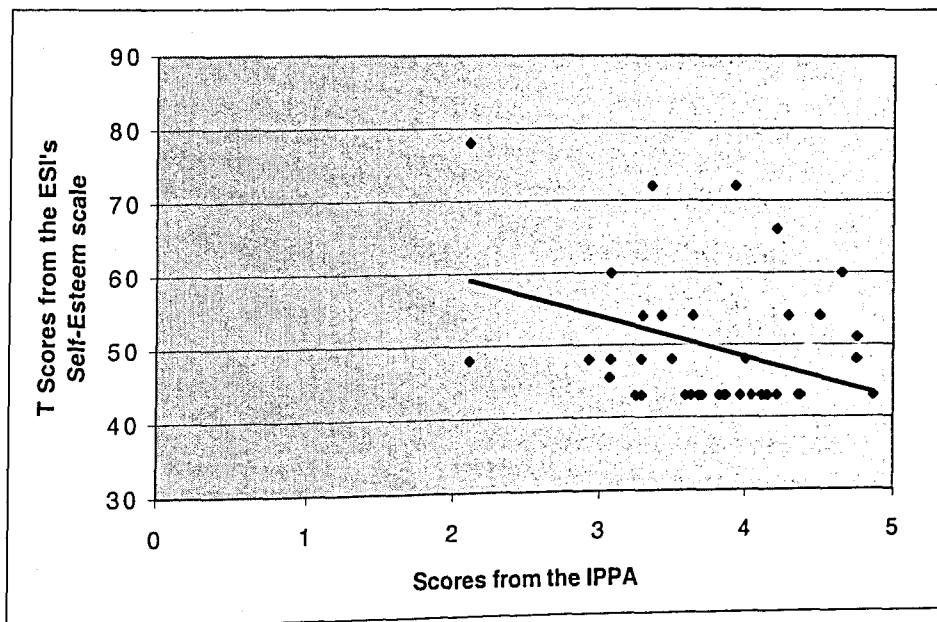
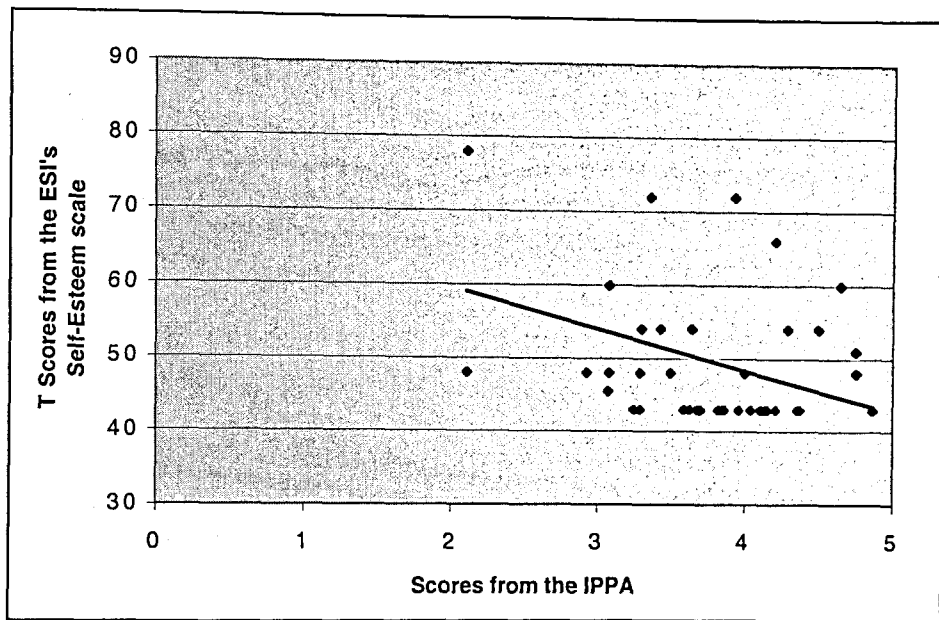
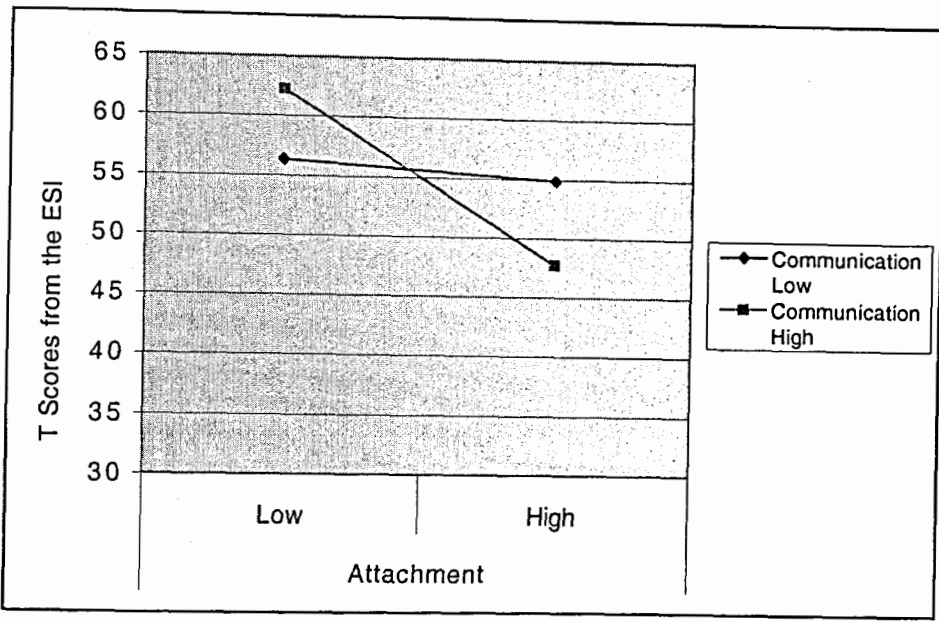


Figure 6

Differences observed in 2 x 2 ANOVA



Differences observed in One-Way ANOVA

