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Patterns of Emotion in Child Behavior Checklist Profile Types among Older Children and Young Adolescents

Michael T. Klinger
Loyola University Chicago

PATTERNS OF EMOTION IN CHILD BEHAVIOR CHECKLIST PROFILE TYPES AMONG OLDER CHILDREN AND YOUNG ADOLESCENTS

by

Michael T. Klinger

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VITA

The author, Michael Thomas Klinger, was born May 28, 1957. He is the son of Thomas F. Klinger and Mary Ann (Stewart) Curtis. His elementary education was obtained in a Catholic school in Oak Lawn, Illinois. His secondary education was obtained in a Catholic high school in Chicago, Illinois.

In September, 1974, Mr. Klinger enrolled at the University of Chicago. He received a Bachelor of Arts in Behavioral Science, with General Honors, in August, 1980.

Following work in a school for emotionally disturbed children on the south side of Chicago, Mr. Klinger entered Loyola University of Chicago in August, 1982, as a graduate student in the Clinical Psychology program. Graduate assistantships for work in Loyola's Library of Tests and Measurements (1982-83) and for clerkship at the Charles I. Doyle Child Guidance Clinic and Day School (1983-85) enabled Mr. Klinger to complete the Master of Arts in Clinical Psychology in January, 1986.

In September, 1987, Mr. Klinger completed his predoctoral internship in professional psychology at the Tri-County Community Mental Health Center, Lansing, Michigan. Since that time, he has been involved in research on the etiology and prevention of childhood psychopathology in alcoholic families being conducted by the Department of Psychology at Michigan State University.

Table of Contents

Table of Figures

Table of Tables

INTRODUCTION

Until recently, research in childhood psychopatholgy has been characterized by theoretical factionalism, diagnostic confusion, and neglect of empirical validation. The emergence of developmental pscychopathology during the last decade suggests new possibilities for integrating different theoretical perspectives and methodological approaches in efforts to understand both adaptive and maladaptive psychological processes in the developing child. Such understanding is crucial to effective clinical work with disturbed children and their families with respect to both diagnosis and treatment of presenting problems. In contrast to child diagnostic schemes and assessment methods that were largely downward extensions of models used with adults, recent work on childhood psychopathology is beginning to focus more intensively on factors such as developmental continuities and discontinuities that play a role in the etiologies, manifestations and maintenance of children's behavior problems. Much progress has been made in the construction of more reliable diagnostic models that are derived from operationally defined and statistically validated behavioral syndromes. Researchers are also more likely to be interested in children's subjective experience than was previously the case. Some of these changes are due to advances in both assessment methodology and statistical analysis while others are the result of efforts to resolve long standing theoretical polarizations and challenge untested diagnostic assumptions.

While all of these trends bode well for the future course of efforts to understand the nature of childhood adjustment problems, they also confront the researcher with many unanswered questions and new areas that need to be explored. For instance, statistically derived diagnostic schemes have been well validated with respect to behavioral correlates of the broad-band categories of children they identify (Achenbach, 1982), but relatively little has been done to articulate the personality characteristics associated with these groups. In contrast, recent investigations of the phenomenology of normal adolescence (Larson, Csikszentmihaly, & Graef, 1980; Csikszentmihaly & Larson, 1984) have successfully challenged received notions of this developmental period as one characterized by turmoil and psychological instability. Thorough examination of the subjective experience of disturbed adolescents has received less attention. Differences in the emotional experience of anxious and depressed youngsters have recently been reported (Blumberg & Izard, 1985, 1986). However, the finding from these studies that self-reports of anger dominate the emotion hierarchies of depressed children (rather than the dominant emotion of sadness reported by depressed adults) raises questions about the differential diagnosis of childhood depression and conduct disorder which few studies have addressed in tandem (Puig-Antich, 1982).

This dissertation investigates the emotional experience of young adolescents and older children and relates self-reported patterns of emotion to parent ratings of psychopathology. It is intended that this investigation will contribute to the understanding of 1.) differences in the subjective

experience of children which may be associated with different styles of maladaptation, specifically Internalizing, Externalizing and Mixed behavior problem styles, and 2.) relationships among average mood variability over a week's time and in various social contexts, peer orientation, and maladaptive versus "normal" adolescent development. This study will also attempt to extend previous research findings, based on classroom questionnaire assessment of children's patterns of emotion, via the Experience Sampling Method, a research strategy that has demonstrated promising ecological validity in studies of the daily lives of adults and older adolescents. The primary goal of this study is to improve our understanding of children's successes and failures as they negotiate the transition into adolescence by investigating the relations between ongoing subjective emotional experience and behavior problem syndromes.

CHAPTER I

REVIEW OF THE RELATED LITERATURE

Developmental Psychopathology

Over a decade ago, Achenbach (1974) took exception to previous work in childhood psychopathology as being largely a downward extension of the study of psychopathology in adults. He emphasized the fact that the "child" is not a static entity and that developmental changes (cognitive, physical, and social role) are to be expected and need to be taken into account in the study and treatment of childhood psychopathology. In the intervening years, a handful of researchers have begun to integrate developmental and clinical psychiatric perspectives in their attempts to better understand and treat childhood psychopathology. However, the issues raised by Achenbach remain more as an agenda for work to be accomplished rather than a list of thoroughly tested hypotheses.

Developmental psychopathology (Achenbach, 1974; Rutter, 1987) has recently emerged as a multidisciplinary effort to reconcile and integrate disparate approaches to the study and treatment of human behavior problems. The key elements which distinguish this eclectic arena of study from the various traditional branches of psychology are (Rutter, 1987, pp. 3-4):

1. A concern with the processes and mechanisms of development through childhood and into adult life with an interest in discontinuities as well as continuities, and with a

special focus on the possibility that experiences or processes in one phase of development may modify an individual's set of responses at a later point through either "sensitizing" or "steeling" effects.

2. Theory and research are interested not in normality vs. abnormality as such, but in the links or lack thereof between normal emotions or behavior and clinical disorders or illnesses. A similar focus is that of investigating the parallels or lack of parallel between "normal" processes of adaptation and change as compared with "abnormal" responses to stress or adversity.

3. The conjunction of the noun (psychopathology) and adjective (developmental) emphasizes a desire to understand both the effects of developmental features on psychopathology (e.g., age-dependent susceptibility to stress or age-differentiated forms of the same disorder) and the effects of psychopathology on development (e.g., the effects of clinical disorders on other aspects of the individual's physical, emotional, cognitive, and social adaptation).

The present study seeks to employ the perspectives outlined above by investigating the emotional experience of children identified by their parents as exhibiting significant behavior problems as they enter adolescence and comparing them with their asymptomatic peers. Recent work by Blumberg and Izard (1985, 1986) suggests that there may be patterns

in the experience of basic emotions (e.g., interest, joy, sadness, anger, etc.) measured by the Differential Emotions Scale (Izard, 1972) that discriminate between depressed vs. non-depressed children, using self-ratings on the Children's Depression Inventory (Kovacs & Beck, 1977) to assess depression. Gordon (1983) used a standard set of clinical interview questions to investigate personality differences between children categorized as either externalizers or internalizers according to Achenbach's (1966) criteria. The present research will use the Experience Sampling Method (Larson & Csikszentmihaly, 1983) to assess the daily emotional experience of fifth - ninth graders identified as internalizers, externalizers, mixed types, and "normals" according to profiles obtained from a Child Behavior Checklist (Achenbach, 1981) filled out by their parents. Previous research suggests that this approach may expect to uncover differences among these groups in terms of differential patterns of emotional experience; differences attributable to age/developmental level, sex and socioeconomic status effects on emotion variables will also be explored although previous studies have produced few consistent findings along these lines. The methodology employed represents an integration of a statistical and developmental approach to the classification of child psychopathology (Achenbach) with an approach to the measurement of children's emotions based on a theory that emphasizes the motivational and adaptive functions of human emotions (Izard, 1972, 1984, 1986). As such, the main thrust of this work is an attempt to

more fully articulate some of the richness of theoretical and clinical description which Rutter and Achenbach suggest a truly developmental perspective on childhood psychopathology may provide.

Approaches to the Classification of Childhood Psychopathology

Achenbach (1974, 1982) has provided critical reviews of the history and development of systematic taxonomies of behavior disorders. These systems, developed almost exclusively with adult patients, have influenced our understanding and classification of psychiatric disorders in childhood. His interpretation of this history sets the framework for his own approach to the task. Beginning in the nineteenth century, the psychiatric profession in Europe found in paresis the prototype for its diagnostic and conceptual approach to mental illness. The elements of the disease model formulated to explain this disorder included:

1. The assumption that an organic etiology would be discovered.
2. Attention to the combination of mental and organic symptoms.
3. Systematic description of symptom patterns that would eventually identify a syndrome of symptoms that consistently occurred together.
4. Documentation of the course of the syndrome and comparisons of those manifesting and not manifesting the disease in order to facilitate differential diagnosis.

In the case of paresis, all of the above conditions were achieved before the discovery of a specific organic cause. The model thus gained in credibility and accepted usage with respect to other mental

disturbances. Emil Kraepelin (1937) developed his taxonomy under the influence of this model which sought to delineate the boundaries of syndrome descriptions by grouping them into types and subtypes. His system set the precedent for descriptive diagnosis of disorders with unknown etiology as the first and most important step toward discovering lawful relations among and within diagnostic categories.

American taxonomies tended to obscure Kraepelin's ideal of descriptive diagnosis under the influence of psychodynamic theory, Adolph Meyer's (1948) formulation of diagnostic categories in terms of "reaction types of the psychobiological unit," and increased attention to characterological and psychogenic disorders. According to Achenbach, the result of this ecclecticism was diagnostic confusion; official taxonomies came to include admixtures of behavioral description, inferences about psychodynamics and theories of causation without empirical support, and untested assumptions about the personalities, environments and developmental histories of persons to be diagnosed. The pinnacle of this pluralistic tendency was the first Diagnostic and Statistical Manual of Mental Disorders (DSM-I, American Psychiatric Association, 1952), "an omnibus classification system of ill-defined phenomena intended to serve many masters" (Achenbach, 1982, p. 31). Within this context, adult categories of mental disorder could could be applied to children but, with rare exceptions, disorders peculiar to childhood went virtually unacknowledged until the 1960's.

One of the exceptions to this trend and a precursor to Achenbach's own approach to childhood diagnosis was the work of Jenkins and his colleagues beginning in the 1940's. They sought to anchor global distinctions (aggressive vs. overinhibited; psychotic vs. neurotic) by looking for groupings of behaviors that tended to occur together in the case histories of children referred to mental health clinics. Initially, Jenkins and his group used a combination of clinical and statistical criteria to find correlations among items scored from these case histories producing an empirically derived taxonomy differentiated by sex which contained the following types: overinhibited, unsocialized aggressive, socialized delinquent, brain injured and schizoid. From here, Jenkins went on to compose personality portraits thought to typify children manifesting the various syndromes. These descriptions formed the basis for several categories of behavioral disorders of childhood and adolescence included in DSM II although this manual provided no objective criteria for applying these categories.

While Jenkins' work represented an important step toward grounding a taxonomic tradition characterized by theoretical factionalism, Achenbach observed that it also left many questions unanswered. Given the limited number of agencies sampled and a list of symptoms abstracted primarily from case records, Achenbach suggested that a different sample of agencies and different methods of data collection (e.g. direct report) and analysis might produce different syndromes. For example, the

"brain injured" category emerged entirely from the records of an agency that had served children infected by an epidemic of encephalitis. Furthermore, a gradual increase in statistical sophistication produced different syndromes from the same data. Finally, Achenbach suggested that a systematic program of research was needed to evaluate the relative merits of prose descriptions of syndromes (a la DSM II) versus empirically based, operationally defined and applied diagnostic categories in terms of fulfilling the various goals of any classification system (e.g., inter- and intra-rater reliability, short- and long-term stability, and consistency across settings).

Whereas taxonomies of adult mental disorders were traditionally based on clinicians' observations of patients in clinical settings, Achenbach argues that a valid diagnostic scheme for childhood disorders must take into account a set of factors that tend to complicate the clinician's job when it comes to evaluating children. First, most children do not readily adopt the role of patient in relation to mental health professionals. Judgments as to whether help is needed and when it should be sought are typically made by parents, teachers, or other adults involved with the child. The child does not ususally seek help on his/her own and is not often inclined or especially capable of aiding in the diagnostic process. Second, clinical settings tend to affect children's behavior, evoking uncharacteristic bewilderment, anxiety, withdrawal, anger, or an exaggerated desire to please a strange adult. Third, and most important for the present study, the pathological significance

of a child's presenting symptoms must be evaluated more in terms of implications for further development than with regard to deviation from normative standards in attained levels of biological, cognitive, occupational and social functioning which are typically used in the evaluation of an adult. Finally, children's economic and interpersonal dependency makes them subject to adult behavior and environmental conditions which they are generally powerless to modify as opposed to the assumption of an adult's relative ability to exhibit agency.

These considerations led Achenbach to reject a single criterion situation or method (e.g. clinician's judgment based on office interviews) for obtaining definitive observations of a child's level of psychological adjustment. Instead, he invokes Heisenberg's uncertainty principle in thinking about how best to approach the problem. "The obstacles to accurate measurement of children's behavior problems...resemble the obstacles to measuring the location and velocity of physical particles that led the physicist Heisenberg to formulate the Principle of Uncertainty: because any measurement procedure affects the target variable, there is no way of obtaining with certainty an exact measure of the target" (1982, p. 34). His own research has attempted to deal with this problem of obtaining reasonably valid measures of clinical syndromes in children via the following methodological assumptions:

1. Despite the impossibility of obtaining precise knowledge of a specific instance of a phenomenon, statistical summaries of imperfectly measured individual instances can

be used to describe the general course of a phenomenon. This strategy...has formed the basis for behavioral research where absolute measurement is precluded both by the effects of measurement procedures and by the impossibility of obtaining measurements that are simultaneously standardized and ecologically valid. Thus, procedures like factor analysis are used to summarize relations among variables imperfectly measured across many individual cases, even though many of the (individual) cases may deviate from the summary pictures obtained.

2. Scientifically valid knowledge depends on obtaining convergent relations among observations of various types...Thus, findings are most useful when they can be corroborated through other types of observations of the same phenomena and/or through verification of predictions made on the basis of the findings...we will seek convergent findings that emerge despite the differing flaws and biases of each study. The sources of data have included ratings that, like those of the Jenkins studies, were made from pre-existing case histories compiled by mental health workers for clinical rather than research purposes, plus ratings made by mental health workers, parents, and teachers who had direct contact with the children and who filled out the behavior checklists to be analyzed. (1982, p. 34).

In this effort toward obtaining reasonably valid empirical descriptions of childhood behavioral problems based on convergent observations by parents, teachers and clinicians, Achenbach has sought to free taxonomic research from the paralysis of theoretical factionalism and uncritical application of received diagnostic categories with less than adequate reliability. The results of this effort to date have been fruitful. A meta-analysis of individual studies (Achenbach and Edelbrock, 1978) showed that an almost universal diagnostic distinction roughly corresponding to the traditional categories of Overcontrolled and Undercontrolled types could be made based on both case histories and direct ratings by mental health workers, parents and teachers. In the 12 studies that produced an Overcontrolled syndrome, typical descriptions included bodily complaints, fears, worrying, withdrawal, and excessive crying. The Undercontrolled syndrome, found in 16 studies, included items such as disobedience, lying, stealing, fighting, temper tantrums, destructiveness and overactivity. Further analysis using a greater number of rated items, more sensitive statistical techniques and separately analyzing children with respect to age and sex showed that it is also possible to identify more specific syndromes with acceptable reliability across two or more studies. These more specific syndromes included symptom patterns labeled Aggressive, Delinquent, Hyperactive, Schizoid, Anxious, Depressed, Social Withdrawal and Somatic Complaints. Thus a distinction is made between broad-band (Overcontrolled vs. Undercontrolled) and narrow-band syndromes. The latter

are identified in fewer studies indicating that some syndromes may be more restricted to particular groups of children, methods of analysis, or sources of data.

Syndromes derived in this way demonstrate more reliable classification of individual cases than clinicians' diagnoses. Studies of clinicians' diagnostic judgments have generally produced inter-rater agreement regarding broad-band categories such as neurotic vs. psychotic on the order of 60 per cent. Intra-rater agreement averages only 72% for evaluations of the same case materials by the same clinician at three month intervals. The syndromes described above, based on parents' and teachers' ratings of specific behavior problems which are statistically translated into a particular child's standing on each syndrome, showed test-retest reliability (1 week to 1 month) ranging from .82 to .90, short-term stability (1.5 to 6 months) ranging from .77 to .83 (.57 to .59 for mental health workers' ratings), and inter-rater reliabilities of .69 (parents), .70 (teachers), and .72 (mental health workers). Different raters seeing the same children in different contexts fared the worst in these comparisons (.19 to .37). Within each comparison, the degree of agreement was only slightly better for broad-band as opposed to narrow-band syndromes. Parent ratings tended to show the highest levels of agreement lending support to the notion that, despite their biases, parents are a crucial source of diagnostic information.

Achenbach has argued that taxonomies must fulfill two other requirements in addition to adequate reliability of behavioral syndrome

descriptions. They should possess the ability to facilitate communication about individual cases and they should be able to discriminate among individuals who differ in terms of etiology, prognosis, types of management necessary and most effective treatment. He notes that little work has been done to compare children categorized according to empirically derived syndromes on such characteristics. What has been accomplished to date has primarily focused on comparisons between Overcontrolled (Internalizing) and Undercontrolled (Externalizing) broad-band syndromes. Internalizers generally fare better when compared to externalizers on such observable dimensions as school performance, peer and teacher ratings, impulsivity, capacity for planning and delayed gratification, parental pathology, short- and long-term prognosis in psychotherapy, and occupational, social and marital adjustment in adulthood. (Achenbach, 1982). With the exception of some work on the disparity between real and ideal self-images (externalizers show less disparity), almost no research has been done to identify differences in the subjective experience of internalizers and externalizers. Achenbach does not mention any studies dealing with mixed externalizer/internalizer types even though many children cannot be neatly classified as one or the other, i.e., those with statistically similar clinical elevations on both dimensions as measured by the Child Behavior Checklist (CBCL). Recently, clinicians have begun to pay more attention to this mixed group (Puig-Antich, 1982; Marriage, et. al., 1986). Achenbach's own research has focused more on the articulation

and verification of the narrow-band syndromes which have flowed from the development of the Child Behavior Checklist in its various forms (1973-82; 1983).

Factor analyses of the 118 problem behaviors and 20 social competence items on the CBCL over nine years of research have consistently produced similar behavioral syndromes for different samples of children; eight or nine factors emerge depending on the age and sex of the children rated (boys vs. girls at ages 4-5, 6-11, 12-16). It is in this sense that Achenbach's approach is focused on the developmental aspect of child behavior problems, i.e., the factor structure and the factors themselves are adjusted for each sex at different developmental periods (preschool, latency, adolescence). A behavior problem profile can be plotted for each child showing his/her score on each factor/syndrome. Profiles can then be classified according to their overall patterning via cluster analysis, in contrast to MMPI profile analysis which frequently relies on analysis of "high points" in the profile.

A recent study (McConaughy, Achenbach, & Gent, 1988) investigated various correlates of 4 internalizing and 2 externalizing profile types derived in this way from parent ratings on the CBCL for a sample of clinically referred 6-11 year old boys. Significant differences among profile types were found on parent ratings of social competence, teacher ratings of classroom behavior and academic performance, direct observations of classroom behavior, and on intelligence and achievement tests. Weaker effects were observed on personality measures of impulsivity, locus of

control, and real versus ideal self-image. Differences among profile types within the broad-band categories suggest that the internalizing/externalizing dichotomy does not represent entirely homogeneous groups of children. Nonetheless, differences between the internalizing and externalizing subsamples were consistent with previous findings (Achenbach & Edelbrock, 1978). Internalizers demonstrated better cognitive, academic, and social functioning than Externalizers. Internalizers also showed more disparity between real-self and ideal-self ratings. This finding lends support to Achenbach's hypothesis that Internalizers may be more motivated toward change due to internal discomfort stemming from this self-image disparity which is in turn the result of greater cognitive differentiation and incorporporation of social mores than is true of Externalizers. The present study, with its sample taken from a non-referred group of junior high and high school students does not yield sufficient numbers of disturbed children to perform meaningful statistical comparisons at the profile level of analysis. We will seek further elaboration of the interalizing/externalizing dichotomy, keeping in mind that there is most likely variability within each larger group and leave further discussion of profile types to future research.

As Achenbach was able to generate a program of research based on both the accomplishments and deficiencies of Jenkins' work, so the present study seeks to extend Achenbach's work into uncharted terrain. Inasmuch as he calls for efforts to develop an integrated science of the person (1974) and stresses the need to know more about the cognitive, social,

academic and other adaptational correlates of his empirically derived classifications (1982), it is surprising how little attention Achenbach has given to the subjective experience of the children he and his colleagues have studied over the years, even with respect to the more well-developed broad-band internalizer/externalizer distinction. On the other hand, perhaps this fact is not so surprising given that research on the subjective side of human emotions in general has received "relatively little attention...and that the empirical research literature was sparse" until recently (Wessman, 1979, p. 76). Furthermore, research on children's subjective experience of emotion in particular has only recently begun to overcome the bias against the child's ability to report reliably and with some meaningful structure and organization on his/her own emotional experience (Blumberg & Izard, 1985, 1986; Csikszentmihaly & Larson, 1984; Russel & Ridgeway, 1983). Recently, Achenbach (Achenbach, et. al., 1987) has begun to address the need for more systematic use of self-report by children themselves in pursuit of the ideal of multiaxial assessment. To date, Achenbach's developmental and statistical approach to the nosology of childhood psychopatholgy has produced reliable and systematic descriptions of significant behavioral syndromes. One must look to other programs of research in order to find the tools to investigate the subjective emotional and interpersonal experience of the children it identifies.

Differential Emotions Theory

Building on the work of Tomkins (1962, 1963), Izard (1986) and his colleagues have conducted a series of studies of patterns of basic emotions in infants, children and adults. Izard's differential emotions theory holds that emotions are active, ongoing processes that are inherently motivational, organizing and adaptive. Izard has argued that the functioning of the human emotional system cannot be reduced to an undifferentiated arousal of the autonomic nervous system by some incentive event (real or construed) which is then evaluated cognitively and organized behaviorally in a hierarchical fashion. His work is in contrast to the prevailing cognitive-contextual view that sees emotion as a response to cognitive or environmental stimuli without acknowledging its adaptive or motivational functions.

Instead, Izard has defined the emotional system in a biosocial context which gives it equal status with cognitive and behavioral systems. Ten fundamental emotions have been defined from verbal labels of facial expression and validated with a high degree of consensus in crosscultural research (Izard, 1971): joy, interest, surprise, sadness, anger, disgust, contempt, shame/shyness, guilt, and fear. Differential emotions theory holds that these discreet emotions are complex phenomena. Each emotion can be analyzed into neurophysiological, expressive, and experiential or phenomenological components with each component requiring different methods of measurement. Furthermore, discreet emotions are qualitatively different, each with unique motivational

characteristics and adaptive functions. Emotions contribute to the adaptive and proactive capacity of the individual as well as they indicate more automatic and reactive responses to the situation or environment with which he/she interacts. (Izard, 1979).

At the biological/neurophysiological level, emotions can be represented as neural programs that subserve motor expressive patterns. Human emotions serve both social/expressive and experiential/feeling functions in ongoing person/environment interactions (Izard, 1986). At the social/expressive level, emotion expression (facial, gestural, verbal) has a signal value for the receiver which in turn may serve as effective motivation in adaptive (or maladaptive) social interaction. For example, an individual's expression of sadness via tearfulness and/or verbal statements of his/her pain may evoke affiliative, empathic, prosocial interaction with others that serves to reassure or comfort. A maladaptive form of the expression of sadness has been observed by Patterson and Forgatch (1988) in a sample of recently separated or divorced mothers. They suggests that depressed mothers in this sample may contribute to the erosion of their already strained social support networks by engaging in habitual and inconsolable expressions of misery which eventually alienate their best friends. At the experiential/feeling level, emotion provides sensory feedback in the form of subjective moods or feelings which serve to motivate and inform behavior, perception, memory, and intellectual performance. It has been shown that sadness interferes with the learning or processing of new information (Hettena & Ballif, 1981). Thus sadness

tends to slow the entire system down and can provide the person time to experience and consider ways of ameliorating the loss or failure that provoked this feeling. On the other hand, sadness also evokes a mood congruency effect (Bower, 1981), enhancing one's recall of other sad events which may prolong the current sad mood. Thus, by itself, sadness (or any other emotion) cannot "be described as categorically good or bad" (Izard, 1979, p. 7) with respect to its contribution to human adaptation. This is not to say that learning, temperament, character style or other developmental variables do not influence the pattern of adaptive vs. maladaptive expression and experience of emotion in individuals; the study of these variables and their impact on and interaction with emotions is fundamental to Izard's approach.

The implications of Izard's view of emotion pose a significant challenge to developmental theory and research which have been dominated by learning theory and cognitive psychology for most of the past two decades (Izard, Kagan, & Zajonc, 1984). Izard notes that general theories of emotion have been lacking in attention to the onotgenesis of affective structure and experience. Those theorists who have addressed this issue have generally favored one of two positions: 1.) a differentiation hypothesis (Bridges, 1932), i.e., that the infant is born with one or possibly two emotions - undifferentiated distress and excitement - and that other emotions differentiate from these in the course of the first 18 months of life as a function of maturation and experience, or 2.) a linkage of emotional development to cognitive development such that

important changes in affective phenomena are seen to follow upon the emergence of a new cognitive ability, e.g., object permanence as a necessary precursor to stranger anxiety (Kagan, 1984). Both of these positions see the emotional life of the infant developing from a "blooming, buzzing confusion" which must be organized by cognitive maturation and experience in social interaction. The alternative view espoused by Izard does not deny the interaction of emotion, cognition and behavior. Rather, it asserts that "the infant is born with neural substrates for each of the fundamental emotions,...(that) each emotion plays a special role in personality development and...(that) styles of emotion expression in infancy predict later adaptation" (Izard & Schwartz, 1986, p. 37). To integrate theories of emotional, cognitive and behavioral levels of development, Izard has suggested:

> ...a systems conception of personality and...the assumption that emotions operating separately and in combination or patterns constitute the chief motivational system, the most important wellspring of human behavior...Emotion conceived as motivation for cognition and behavior can also be conceived as primal in development, facilitating the functioning and organization of the various organismic systems...so essential to effective adaptation amid increasingly complex social and environmental demands. (Izard, 1984, pp. 33-34).

For Izard, the focus of developmental psychology shifts from an emphasis on the regulation (or lack thereof) of emotion by cognitive and behavioral systems to explain personality development toward a search for systemic interaction:

> For psychology, we think the greatest challenge is the ontogeny of affective-cognitive structures, the study of the development of links between the neuromotor emotion programs on the one hand and the images, symbols, and ideas that derive from cognitive processes on the other. In other words, a young infant has emotion feelings and action tendencies, but developmental processes must proceed for a time before the infant has images, words, and thoughts. Therefore, feelings, actions and thoughts are neither automatically connected nor connected only in adaptive ways. The basic issue then is how these links are formed and what contributes to adaptive and maladaptive linkages. (Izard & Schwartz, 1986, p. 38).

Of central interest to the present study is the work of Izard and his colleagues on characteristic patterns of basic emotions that tend to be associated with different forms of psychopathology or maladaptive personality styles (especially anxiety and depression) in adults (Izard, et. al., 1974), adolescents (Izard, 1972), and children (Blumberg & Izard, 1985, 1986). Fundamental to these investigations is the assumption that "intense emotions such as rage or panic can lead to maladaptive behavior, but the emotions of anger and fear intensify to rage and panic

because of a genetic predisposition or lack of coping skills in stressful situations, or both...Whereas emotions are considered as the principal motivators (causes) of human behavior, they are not thought to be the basic causes of maladaptive behavior and psychopathology;" the latter must be sought in genetic, biochemical and experiential factors (Izard & Schwartz, 1986, p. 34).

The Differential Emotions Scale (DES) is the primary instrument used in Izard's studies. It is a self-report scale consisting of 30 adjectives (3 adjectives for each of the 10 fundamental emotions) rated on a 5-point scale of intensity or frequency. The original form of the DES was conceived as a "state" measure of an individual's experience of basic emotions. By changing the instructions to the respondent, it can also be used to assess emotional experience over an extended period of time, i.e., as a "trait" measure (DES II). It has demonstrated good test-retest reliability in this latter format, ranging from .68 for Fear to .87 for Enjoyment. Item-factor correlations for "state" instructions range from .73 to .90 (Izard, 1977).

Izard's early research with adults (1972) predicted different patterns of emotions for depressed and anxious individuals based on psychoanalytic theories of these disorders. While not confirmatory of etiological hypotheses with respect to anxiety or depression, this work is based on the assumption that "through the interaction of biological factors (e.g., emotion thresholds and temperament) and socialization, individuals become predisposed to particular emotions in certain situations. When

a particular emotion is experienced frequently, it can become a personality trait or a stable response to particular situations" (Blumberg & Izard, 1986). Research with college and high school students has indeed produced reliably different patterns of emotions characterizing anxiety and depression that appear to be stable across groups. Whereas depression is dominated in rank-order by sadness, inner-directed hostility, fear, and fatigue, with interest and joy inversely related to depression, anxiety is characterized, again in rank-order, by fear, interest (alert, attending and concentrating), guilt, shame and shyness (Izard, 1972). Izard cautions that these patterns (emotion hierarchies) are derived from group averages and may vary considerably for individuals with psychological disorders. In another study, Izard et. al. (1974) asked patients with various psychodiagnoses and normal college students to rate their emotions as experienced "over the past year or two." Individuals diagnosed as neurotic reported experiencing more sadness, fear and guilt and less joy than normals. Those diagnosed with personality disorders reported experiencing less joy than normals. Adjustment disorders were characterized by more disgust while schizophrenics reported significantly more disgust and contempt than normal college students.

The majority of work with the DES has involved college students. Izard's factor-analytic study of depression in high school students (1972) produced a factor structure similar to that among depressed college students but factor loadings that ranged in magnitude from .2 to .3

below those in the college sample. Analysis of the high school students' responses suggested that some individuals did not understand the meaning of some of the items adding measurement error and attenuating the item-factor correlations. This prompted the development of a simpler version of the scale, DES III, for use with children and adolescents. In this version, single adjectives of the DES (e.g., attentive) were translated into phrases describing the experience of the particular adjective (e.g., feel like what you're doing or watching is interesting). This version was validated for use with children as young as 8 years (Kotsch, Gebring, & Schwartz, 1982). A more recent version, the DES IV, is identical to the DES III with the addition of two experimental scales: self-directed hostility and shame.

Recent studies (Blumberg & Izard, 1985, 1986) of a rural public school sample of 10- and 11-year old children highlight developmental issues in the emotional experience of depression and anxiety. The DES IV was used to predict differences in patterns of emotion between depressed and non-depressed children in the first study and between depressed and anxious children in the second. The results of these studies provide initial support for the validity of hypotheses derived from differential emotions theory as applied to children.

The depression study (1985) showed that depressed children (Children's Depression Inventory score > 19) experience a pattern of emotion that is similar to that of depressed adults and significantly different from their non-depressed peers (CDI < 2). The major difference

was that anger replaced sadness as the most frequently reported emotion with sadness taking second place in children's self-reported emotion hierarchies. This study also found a significant difference between depressed boys' and girls' emotion hierarchies. Depressed girls reported higher means on self-concerned negative emotions, especially sadness, inner-directed hostility, and shame, resembling the subjective states of adult depressives. Depressed boys reported higher means on anger and contempt, emotions directed at the environment, suggesting that they may be more likely to appear conduct disordered. This difference was not replicated in the second study, however, suggesting the need for further investigation of sex differences in the emotional development of depression. As a further test of the theory, Izard compared his model of the affective components of childhood depression with DSM-III affective criteria (which do not include anger, fear, or shame), the Toolan model (guilt, shame, anger), and the Mendelson model (sadness, joy). In separate multiple regression analyses for boys and girls, Izard's model accounted for more variance in CDI depression scores than any of the other three models.

The second study (Blumberg & Izard, 1986) consisted of a partial replication of the investigation of patterns of emotion in children's depression, a comparison of emotion hierarchies in depressed versus anxious children, and an assessment of the stability of children's emotion patterns over a four month period. Again, the results tended to support the differential emotions hypothesis

of characteristic patterns of emotion that discriminate the subjective experience of anxiety and depression. Multiple regression analyses showed that predicted emotion hierarchies derived from DES-IV scales accounted for significant amounts of variance in children's self-report measures of anxiety (State-Trait Anxiety Inventory for Children (STAIC)) and depression (Children's Depression Inventory (CDI)). The apriori emotion hierarchy for depression accounted for 61.5% of the variance in the CDI (sadness: 43.9%; self-directed hostility: 7.07%; anger: 1.19%; fear: 1.96%; interest: 2.9%; joy: 4.09%). As in the first study, mean ratings of anger by depressed children were higher than any other emotion scale mean. The DES anxiety hierarchy accounted for 66.8% of the variance in the STAIC (fear: 42.1%; guilt: 6.9%; sadness: 13.9%; shame: 3.3%). Over a four month interval, DES-IV scale scores were moderately stable with Time 1 - Time 2 correlations ranging from .30 (interest) to .75 (shame). Although the CDI was highly stable (Time 1 - Time 2, $r = .71$), the DES-IV scales at Time 1 were still able to account for a significant amount of unique variance in the Time 2 CDI after the Time 1 CDI was partialed out, i.e., the DES-IV scales were able to function as predictors of future depression.

These initial studies of patterns of emotion in children exhibiting significant psychopathology suggest that it may be clinically and theoretically useful to look for similar patterns in children manifesting other problems. Izard notes that the prevalence of anger in depressed children's self-reports may shed some light on the clinical observation that conduct

disorders and significant depression may coincide for some children (Puig-Antich, 1982). Inasmuch as his studies have not differentiated depression from conduct disorder, it may be that his small sample of depressed children actually contains a significant proportion of mixed externalizing/internalizing types according to Achenbach's classification scheme and that the pattern of emotion he has identified as characteristic of these children might not fit as well for "pure" internalizers. Internalizers might be expected to report patterns of emotion closer to adult hierarchies for depression and anxiety. The pattern for externalizers is more difficult to predict from differential emotions theory. The work of Patterson and his colleagues (Coercive Family Process, 1982) with aggressive children suggests that anger, contempt, underdeveloped social conscience (guiltlessness), and joylessness are primary in their clinical presentation. This pattern of emotions is similar to that identified for depressed boys in the first study (Blumberg & Izard, 1985). Gordon (1983) found that children classified as externalizers post hoc from case record material were more likely than internalizers to report being happy in clinical interviews while internalizers presented themselves as generally sad and socially isolated. As Gordon points out, in light of such impressionistic findings, "the time is ripe for other studies which explore personality and clinical correlates of nosological groups. In this way, factor analytically derived diagnoses can gain a clinical reality" (1983, p. 446).

It also needs to be shown to what extent the patterns of emotion reported by children on the DES-IV characterize their daily experience in various settings, i.e., to what extent do such patterns describe the ongoing affective experience of disturbed children (and, therefore, potentially motivate and organize their moment-to-moment cognitions and behavior) outside of the opportunity afforded by a questionnaire to reflect on their past experience? In order to address this issue for the purposes of the present study, we must turn to one last body of literature and research.

The Experience Sampling Method

The sampling of experiences *in situ* (Hormuth, 1986) is a relatively new innovation in the psychological study of human beings. While several researchers have contributed to the development of this methodology (Brandstatter, 1981, 1983; Hurlburt, 1979; Klinger, 1978; Nowlis & Cohen, 1968), Csikszentmihaly and Larson (1987) are generally acknowledged as the most influential pioneers in experience sampling research. Applications of the Experience Sampling Method (ESM) typically have participants carrying electronic pagers ("beepers") and reporting on their affective, cognitive and behavioral experiences immediately following signals. ESM thus strives to maximize ecological validity in the study of moods, thought processes and person/environment interactions. The richness of data collected using this technique provides the opportunity to test psychological hypotheses quite rigorously at both nomothetic (between groups) and idiographic (within groups and individuals) levels of analysis. Over a week's time, a range of 35-70 self-reports per person are collected. Each report includes

measurements of multiple variables including situation (activity, location, with whom), cognition, concentration, choice/wish to be doing current activity and various affects, especially mood and activation level. With this attention to both the internal and external circumstances of an individual's daily life experiences, ESM lends itself quite readily to an emerging interactional approach to the study of persons. This approach is in contrast to the long standing debate between those who emphasize the relative primacy of situations versus those who stress individual differences in the explanation and prediction of human behavior.

ESM has been used extensively in the study of normal personality constructs with adults including attempts to extend laboratory findings into natural settings (Csikszentmihaly & Figurski, 1982; Duval & Wicklund, 1972), studies of the stream of behavior (Hurlburt, 1979; McAdams & Constantian, 1983), and in the study of naturally occurring events (Hormuth, 1983; Reis, et. al., 1982). Some work has also been done using ESM to study the experience of adults manifesting various forms of psychopathology, including multiple personality disorder (Lowenstein, et. al., 1987), schizophrenia (deVries, 1983; deVries, et. al., 1986) and bulimia (Johnson & Larson, 1982). In a groundbreaking and comprehensive study, Csikszentmihaly & Larson (1980, 1984) showed that experience sampling could be used reliably with high school students. Teenagers compared favorably to adults in their rate of responding to signals (69% and 80%, respectively) suggesting that adolescents are quite capable of providing us with a reasonably thorough picture of their daily experience. The data for this dissertation

will come from a larger study which seeks to extend the application of ESM to a younger adolescent population (grades 5 - 9). Several analyses using data from this project have been completed to date including a study of the ecology of depression in late childhood and early adolescence (Larson, Richards, Raffaelli, Ham, & Jewell, in press). Three ESM studies are reviewed here in some detail in order to highlight theoretical constructs and applications of the ESM method that will pertain to the present investigation of childhood psychopathology.

Johnson & Larson (1982) compared normal weight bulimic patients to normal controls using experience sampling to assess overall moods, extent of mood fluctuation, degree of social isolation, and extent of food related behavior. The study also used a sequence analysis to investigate the affective impact of bingeing and purging among the bulimic group. Analyses of responses to bipolar mood scales (e.g., cheerful/irritable, alert/drowsy) showed that bulimic women reported significantly more negative average mood states as well as significantly more variability (less stability) in their moods than normal controls. Bulimic women spent more time alone than the control group (49% vs. 32%) and, as expected, spent much more time engaged in food-related behavior (38% vs. 14%). Within-subjects analysis of binge-purge episodes showed that relative to their own affective homeostasis during other periods of their lives, bulimics felt significantly more irritable, weak and constrained than usual immediately before a binge or a purge. During the binge, self-reported affective state worsened considerably, being characterized by a loss of control and adequacy and

an increase in guilt, shame and anger. Purging episodes were characterized by more sadness and weakness with an increase in feeling alert compared to bingeing. In the period following a purge, these negative affects do not quickly return to baseline levels although anger declines, alertness increases and feelings of adequacy and personal control begin to return. These findings exemplify the way in which ESM data can be used both to differentiate a group manifesting pathology from a normal group and to document characteristic symptom patterns within a diagnostic group.

In contrast to such work with clearly defined psychopathology, Larson and Csikszentmihaly have argued eloquently against a view that sees an entire phase of development, i.e., adolescence, as fundamentally pathological. Their studies offer evidence contradicting developmental theories that portray adolescent mood variability as the cornerstone of a predictable and phase-specific psychosocial maladjustment precipitated by overwhelming internal and external pressures associated with the onset of puberty ("adolescent turmoil"). Larson and Csikszentmihaly (1980, 1984) concluded that "variability (in mood and concentration) is not a malady of adolescents, but may well be an obstacle to their growth," (1980, p. 488) depending on how adults respond to this developmental stage.

Again using between-groups and within-group comparisons, three properties of mood measured by ESM were analyzed in the 1980 study of normal suburban adolescents and adult volunteers from Chicago area businesses. As expected, adolescent moods were shown to vary between wider extremes (larger standard variations of mood scale items) and be more

changeable (shorter attenuation of extreme moods) than adult moods. Adolescents were also unable to sustain high concentration levels for much longer than 30 minutes (as opposed to adults reporting sustained concentration at high levels for as long as two hours or more). On the third dimension of mood analysis, adolescents did not differ from adults in the predictability of their mood states (situational independence, i.e., amount of variance in mood associated with particular activities). Given that adolescent moods are more variable, Larson and Csikszentmihaly went on to test the hypothesis that this variability should be associated with psychosocial disequilibrium and lack of control within the adolescent sample. Control was measured directly via the ESM report. Indicators of psychological and social adjustment included average self-reported composite mood, scores on the Loevinger Ego Development Scale, scores on scales measuring alienation from self and others, semester grades, teachers' ratings of intellectual and social involvement, number of friends, and involvement in a leadership position in a club or organization. Although changeability and degree of variation in moods were positively related to difficulty in concentration, there was no strong relationship between mood variability and sense of control. There was also a lack of correlation between mood variability and measures of psychosocial adjustment (with the exception of a negative association with teacher's ratings of intellectual involvement in class). In fact, adolescents reporting <u>wider</u> mood variation were less alienated from others and more likely to be leaders. The opposite hypothesis, i.e., that inhibition of moods rather than their free expression

is the maladaptive response to adolescent conflicts, was not supported by the data either. However, it must be kept in mind that in this relatively small sample (N = 75) of "normal" non-referred adolescents, the proportion of disturbed individuals would most likely be too small to generate effects large enough to observe, seriously limiting a rigorous test of such hypotheses with regard to bona fide psychopathology.

In as much as mood variability did not predict poor adjustment, the authors wanted to know what it did represent for normal adolescents. Their approach is compelling. They suggest that the observed emotional variability might be related to Western adolescents' peer oriented lifestyle rather than to overwhelming internal drives or the stretching of immature defenses by new and more stressful environmental and social demands. While this hypothesis was not supported with regard to the changeability or situational independence of adolescent moods, lifestyle variables were related positively to mood variation. Wider mood variation was reported by those who spent more time with friends in public places, more time thinking about their appearance and heterosexual relationships, and more so for those involved with a boyfriend/girlfriend and/or in leadership positions. It appears that such peer orientation competes with school involvement for some adolescents' attention and concentration; the mood variation generated by this lifestyle interferes with the adolescent's ability to attend to the world outside their immediate experience (Larson, Csikszentmihaly, & Graef, 1980). Larson and Csikszentmihaly (1984) also portray the opposite type of adolescent, strongly committed, perhaps prematurely, to adult

values and pursuits with respect to school and occupational activities and goals. Neither type (peer oriented, adult oriented) is "maladjusted" by the criteria used in these studies, but the implications of what it means to be an adolescent from this perspective highlight the cultural and historical conditions to which each type is responding:

> In the twentieth century, young people have inherited expectations that attempt to merge the Protestant work ethic with a belief that the rewards of heaven are accessible on earth. They are expected to take adult responsibilities seriously and at the same time to reap the celebrated pleasures of youth. Some adolescents...cope with this double expectation by giving up the former...Others...focus all their attention on the latter. The solutions they have chosen only seem to intensify their emotional variability. In a sense, both their goals are unrealistic. (One) expects too little from adult life, (the other) expects perhaps too much.
>
> The central question is how this variability relates to personal growth. Many psychologists recognize that conflict is a necessary condition of growth...The impetus for growth usually comes from a challenge that cannot be avoided.
>
> The swings of emotion are probably neither good nor bad. What matters is how teenagers respond to the challenges of their unpredictable environment. Those who learn to control psychic energy to make their goals come true will become confident, competent individuals. (1984, p. 125).

A clearer description of the internal world of the typical adolescent as well as the salient aspects of the environment to which he or she is responding emerges from this research. Mood variability per se does not appear to be as disequilibrating or pathognomic as has been assumed. Indeed, it may even be a concomitant of a healthy response to a young person's expanding interpersonal world. This view is similar to that of Differential Emotions Theory in that it suggests that the ebb and flow of an individual's emotional experience need not be pathological in and of itself. Instead, one is obliged to consider other factors, including individual choices and learning experience as well as cultural pressures and mileu, to explain the diversity of individual adjustment. Nonetheless, because of the relatively small number of adolescents sampled in the studies just cited and the likelihood that the experiences of more disturbed adolescents were underrepresented, it is necessary to pursue questions about the emotional experience of youngsters labeled emotionally disturbed or behavior disordered. For these young people, one would still expect to find a significant relationship between variability in subjective emotional experience and external indicators of poor adjustment.

The present study proposes to investigate the emotional experience of those young adolescents who could be characterized as acting out the extreme solutions to the dilemma of peer orientation versus compliance with adult expectations. According to a hypothetical schema proposed by Patterson (1982), different styles of parental discipline produce different types of child behavior problems. At one extreme, overeffective discipline

carried out by overinvolved, enmeshed parents is predicted to produce neurotic, withdrawn children; perhaps as adolescents they have learned too little autonomy and too much compliance to enjoy a peer-oriented lifestyle or self-directed academic achievement. At the other extreme, ineffective, irritable discipline wielded by underinvolved, distant parents has been shown in Patterson's work to be very highly predictive of antisocial behavior in children; by adolescence, these young people are well established in deviant peer groups and derive little reward from their marginal academic involvement. If mood variation is related to peer orientation among normal adolescents, it seems that at these pathological extremes it might also be a factor worth investigating. Will externalizers show even more mood variation than their normal peers related to preoccupation with a deviant peer group and its activities? Will internalizers exhibit a constricted range of affect due to social isolation? Will mixed types be less predictable given that they have not yet opted for one solution (externalizing, deviant peer orientation) or the other (internalizing, social withdrawal)? The final study to be reviewed suggests inital answers to some of these questions.

A study similar in structure to the one proposed here using the same sample of children has recently been completed. It is, to this author's knowledge, the first comprehensive attempt to relate self-reported daily experience to clinically significant psychopathology in childhood and adolescence. Larson, et. al. (in press) investigated the daily emotional and interpersonal experience of young adolescents and older children

identified as depressed by self-report on the Children's Depression Inventory (CDI). ESM measures of subjective psychological state, companionship and activities were compared for depressed versus non-depressed students in a sample of 406 randomly selected 5th to 9th graders from two suburban Chicago school districts, one white working class and the other white middle class. Of particular interest in this investigation was the question of the validity of DSM III-R criteria to the phenomenology of childhood depression, i.e., do older children and young adolescents actually experience the list of symptoms attributed to a depressive disorder? In addition, analyses focused on age, gender and social context as mediating variables in the subjective experience of depression.

Using a cutoff score of 12 on the CDI, 32% of the students in the total sample were classified as depressed. Significant effects for grade level (5th & 6th graders vs. 7th to 9th graders) and SES were reported. Early adolescents and working class students rated themselves as more depressed than their preadolescent and middle class counterparts. Further analyses were conducted with grade, sex, and community (SES) included as independent factors in addition to depression in order to explore anticipated differences in the patterns of subjective experience associated with depression.

Aggregate measures of affect, emotional variability, social states, psychological investment, and energy were derived from factor analysis of 24 ESM questionnaire items. These measures were then subjected to multivariate analysis of variance with depression, age, sex, and community

as independent factors. Significant main effects for depression were found for all five measures of average psychological state, with depressed youngsters reporting more negative subjective states on each variable. These differences were larger for children in the older age group. While subjective states accounted for a significant amount of variance in depression scores for the older group ($R^2 = .18$), this association minimal for the younger group ($R^2 = .07$).

Repeated measures analyses of these same subjective state varibles across four social contexts (alone, with family, in class, with friends) did not reveal a significant interaction of depression and social context, suggesting that the pattern of depressive experience for these children is consistent across social settings. Depressed children also rated others as less friendly across social contexts with family members perceived as least friendly. Similarly, depressed children were more likely than their non-depressed peers to report a wish to be alone across all social contexts, but especially when with their families, further emphasizing that the family setting may be a particularly unpleasant environment for depressed children. Finally, in spite of the common wish to be alone among depressed children of both sexes and age groups, only depressed boys appear to actually withdraw from peer relationships. This finding was stronger for younger boys than for older boys. Depressed boys are also less likely to think about or participate in sports, an important peer activity at this age. This social withdrawal does not extend to their thoughts and con-

versations, however. Depressed boys spent just as much time as their peers thinking and talking about friends, although they spend more time thinking about their families and less time thinking about sports.

Two major conclusions are drawn from these results. First, the weaker effects for predicted affective and interpersonal correlates of depression for preadolescents suggests that either they are unable to identify and record negative affect and other subtleties of their psychological states or that these states are less central characteristics of depression during this age period. For the sample as a whole, it appears that preadolescents are less likely than older students to report the experience of negative affect (Larson & Lapman-Petraitis, submitted for review). Second, the authors interpret the finding of sex differences in interpersonal activity among young adolescents as supportive of the literature concerning the differential presentation of depression in males and females. The subjective difficulties reported by depressed girls do not appear to keep them from pursuing interpersonal relationships. Depressed boys report more difficulties in peer relationships and tend to be more socially isolated. It is suggested that this isolation may not be voluntary to the extent that boys may be more likely to externalize their depression via aggression and/or depressive affect provoking rejection by their peers. As in the studies previously discussed (Blumberg & Izard, 1985, 1986), this finding of differences in the experience of depression between boys and girls raises the issue of differential diagnosis of conduct disorder and depression, especially for boys. Furthermore, it may be important to

consider the dichotomy of internalizing vs. externalizing symptom patterns with respect to this issue. The Children's Depression Inventory is not a comprehensive measure of psychopathology. It is not designed to identify other problems children may be having nor does it distinguish between depression as a primary versus secondary symptom. Further research is needed to investigate the interactions and possible confounding influence of sex and style of psychopathology among children.

The present study seeks to extend the investigation of issues raised by the studies reviewed above. The primary objective will be to identify self-reported patterns of emotion and other psychological states that differentiate diagnostic groups of older children and young adolescents from one another and from from their asymptomatic peers. The diagnostic groups of interest are the broad-band classifications produced by Achenbach's Child Behavior Checklist: Internalizers, Externalizers, and Mixed types. We will also compare these groups across different social contexts (with family, with friends, in class, and alone) to determine the relative stability of their subjective experiences in different interpersonal environments. Finally, social competence and peer orientation among the four groups will be examined to see if diagnostic classification can predict differences in social skills and peer related activities. Hypotheses concerning the relationship of peer orientation and mood variability will also be tested under this rubric. Within each of these areas of psycholgical and psychosocial functioning, attention will be paid to the effects of age, sex, and social class.

CHAPTER II

SPECIFIC OBJECTIVES

Significance of this research

Research on childhood psychopathology has only recently begun to integrate developmental and clinical perspectives in a systematic way. Our relative lack of knowledge about the personality correlates and subjective experience of children classified according to statistically derived categories is indicative of the nascency of this effort. The present study seeks to improve our understanding of characteristic patterns of emotion in the well-established Internalizer/Externalizer dichotomy and to investigate such patterns in the comparatively unresearched mixed type. A major assumption in this study is that these basic emotions exert a powerful influence on the observed pathologies, i.e., that emotions can be shown to exert an organizing influence on day-to-day behavior and cognitions. This is in contrast to the predominance of cognitive and learning theories in developmental psychology which have typically modeled emotions as phenomena secondary to cognitive and behavioral events in the child. What we do know about patterns of emotion in childhood psychopathology has been gleaned largely from questionnaire methods of sound but limited validity with regard to the strong hypotheses of differential emotions theory. In light of this issue, this dissertation will use a rigorous and comprehensive sampling of young adolescents' day-to-day emotional experience, the Experience Sampling Method (ESM), to test the ecological

validity of hypothesized emotion hierarchies believed to discriminate among different types of behavioral and emotional disorders. Furthermore, the application of differential emotions theory to clinical problems in children has been restricted to only two diagnostic categories (depression and anxiety). In the study proposed here, the use of Achenbach's classification scheme allows us to look at the emotional experience of children who constitute the bulk of referrals to child service agencies (i.e., externalizers) and seeks to clarify the relations between categories in terms of characteristic emotional adaptation, perhaps affording more insight into clinical interventions that might be useful with these groups. The classification of childrens' pathology according to the empirically derived dimension of internalizing and externalizing styles also provides an opportunity to examine the issue of differential diagnosis of depression and conduct disorder raised in previous research.

The use of Experience Sampling data enables us to investigate other pertinent subjective and interpersonal correlates of diagnostic category. Paralleling previous research by Csikszentmihaly and Larson (1980, 1984) who have successfully used ESM with normal older adolescents, the present study will explore mood variability among young adolescents with and without significant behavior problems to see if this variable is systematically related to maladaptation. Their results suggested that mood variation was not related to individual maladjustment but to other variables such as peer oriented lifestyle and cultural tensions between the work ethic and the pursuit of pleasure. It would be important to know if this less

pathological interpretation of adolescent mood swings applies to youngsters with bona fide emotional and behavioral problems as well. Larson, et. al. (in press) were able to describe significant relationships between children's self-reported depression and daily self-reports of subjective states consistent with DSM III-R criteria for depressive disorder, psychological states in various social contexts, and how they spend their time. The present study will also explore the relationships between diagnostic category and these other dimensions of psychosocial functioning. They also found significant effects of sex and age in the impact of depression on social interaction. These results suggested the mediating influence of sex and developmental level on the expression of depressive symptomology. Previous research has produced little in the way of replicated findings of differences in young people's emotions as a function of demographic variables. Csikszentmihaly, Larson, & Graef (1980) found no differences in mood variability among subgroups of adolescents with regard to these variables; Blumberg & Izard (1985, 1986) were not able to replicate an initial finding of sex differences in patterns of emotion among 10 and 11 year olds. It is hoped that the use of a somewhat more differentiated diagnostic classification may shed some light on the mediating effects of demographic variables. Therefore, differences in daily experiences within groups (normals, internalizers, externalizers, mixed types) with respect to age/developmental level, sex and socioeconomic status will be explored.

Hypotheses

Patterns of Emotion in CBCL Types

Clinical groups should be characterized by different emotion hierarchies:

Internalizers' emotion hierarchies should be dominated by fear, sadness, guilt, shame and diminished joy and interest, resembling the patterns of emotion identified for depressed and anxious adults (Izard, 1972). Internalizers should report higher mean experiences of fear and sadness than of any other emotion; their mean ratings on fear and sadness should also be higher than any other group.

Mixed Externalizers/Internalizers' emotion hierarchies should be characterized by relatively equal experiences of anger and sadness with girls in this group more likely to report sadness as their highest mean emotion and boys most likely to report higher levels of anger. Female mixed types are predicted to report sadness at a rate higher than all other groups except internalizers. Male mixed types should report more anger than other groups except externalizers. These patterns are suggested by the internalizing and externalizing styles attributed to boys and girls with elevated CDI depression scores (Larson, et. al., in press) and by the finding that depression and conduct disorder may be confounded for some children (Blumberg & Izard, 1986; Puig-Antich, 1982).

Externalizers' emotion hierarchies should be dominated by anger and diminished guilt, shame and joy. Anger is predicted to be their highest mean emotion and should be higher for externalizers than for any other group. This pattern of emotion is suggested by Patterson's (1982) work with aggressive children and by Gordon's (1983) post hoc analyses of clinical interviews with children classified as externalizers.

Daily Psychological States Associated with CBCL Type

It is hypothesized that **all three clinical groups** (Internalizers, Externalizers and mixed types) will experience more negative average affect, and poorer attention than their normal peers. Arousal and mood variability are expected to vary as a function of group. Previous research suggests that internalizers are less impulsive and are more capable of delayed gratification than externalizers but is otherwise silent on the kinds of psychological states to be assessed in this study. The hypotheses presented here are suggested by the clusters of problem behaviors in the Child Behavior Checklist (CBCL) scales that make up each dimension.

The behavior problem scales that constitute the internalizing dimension of the CBCL (e.g., schizoid/anxious, depressed, uncommunicative, somatic complaints, social withdrawal) describe children who should appear psychologically shut down or self-absorbed. **Internalizers** are predicted to report less variation (smaller standard deviations in composite affect and arousal) in their moods than any other group. They are also expected to report the lowest average arousal.

The externalizing behavior problem scales (e.g., hyperactive, aggressive, delinquent, sex problems, cruel) describe children who should appear more volatile and restless. **Externalizers** are predicted to report the greatest variation (larger standard deviations) in their moods compared to other groups. They should also report the highest average arousal.

Mood variability and average arousal among **Mixed types** are not expected to differ significantly from normal young adolescents inasmuch as tendencies toward one or the other of the "pathological" affective styles just described should be equally distributed in this group (perhaps girls favoring the internalizing style while boys choose the externalizing pattern) thus cancelling each other out in linear comparisons (group mean level of analysis). The hypothesis that girls and boys in this group may favor different affective styles will be tested, however.

Psychological State as a Function of Social Context

As in the investigation of the ecology of depression (Larson, et. al., in press), this study will compare diagnostic and normal groups across four major social contexts (with family, with friends, in class, and alone) to determine the relative stability of their subjective experiences in

different interpersonal environments. The variables of interest in these comparisons are mean levels of affect, arousal, attention, and characteristic emotions[1], and perceived friendliness of companions.

The average affective state of **Internalizers** is expected to be the most consistent across social settings. To the extent that they are socially withdrawn, as a group they may experience their best moods when alone and prefer to be in this situation. Other social contexts should precipitate significant disturbances in their affective states. Social withdrawal among internalizers should also negatively influence their perceptions of others in all social contexts, although this effect should be less pronounced than with externalizers. Mean levels of sadness and fear should be highest with family and in school as these are the two situations in which they may feel most pressed and least able to interact and perform. Sadness and fear should be less when with friends and alone.

Externalizers' moods are expected to be the least consistent of any group. They should experience their best moods with friends and significantly more negative moods with family and in class to the extent that their impulsivity and aggressiveness draws negative adult attention but may be more acceptable among peers. Their moods when alone may be neutral in comparison to these extremes although they should be less inclined to be

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1 It was not possible to test hypotheses related to characteristic emotions due to insufficient data across social contexts. See discussion of social context analyses in results section for details about this problem.

alone. They are likely to feel the most anger and least joy in interactions with adult authority (family, school) and the least anger and most joy with their friends. They are also expected to report their perceptions of others as extremely unfriendly at home and school while their friends should be perceived as their most friendly companions.

As in the discussion above with regard to daily psychological states, the consistency of moods across social settings for **Mixed types** as a group is not expected to differ much from that of their normal peers. Instead, sex differences are hypothesized to be more powerful in determining the interaction of social context with moods and sociability. Girls should report a pattern of subjective experiences in different settings similar to that described for internalizers while boys should report experiences paralelling those of externalizers. These patterns may not be as pronounced for boys or girls in this group as they are in the more extreme groups to the extent that these children may be struggling with significant problems on both dimensions and therefore have a more varied and less predictable style of social adaptation.

Social Competence and Peer Orientation Among Diagnostic Groups

The major hypothesis to be tested in this final section concerns the interaction of mood variability and peer orientation. Larson, Csikszentmihaly, & Graef (1980) found that this was generally a positive relationship in their study of normal adolescents. Within the more disturbed groups identified for this study, it is expected that mood variability and

peer orientation will be related as well, but in a more maladaptive way. **All clinical groups** (Internalizers, Externalizers, and Mixed types) are expected to receive lower ratings of social competence (Child Behavior Checklist) by their parents as compared to similar ratings by parents of their normal peers. The pattern of children's disturbed peer relations that provoke this negative parental assessment are expected to vary according to diagnostic group. Peer orientaion will be determined via several ESM items (percent of time spent in various types of activity with friends, peer related thoughts and topics of conversation) as well as social contacts reported by the parent on the CBCL items asking about friends (number of friends, frequency of contact). These variables will be compared across groups and correlated with variation in composite mood ratings.

Internalizers are predicted to report less variability in their moods and this tendency should be associated with social isolation (fewer friends and peer related thoughts and activities, better parent ratings of capacity to work and play by themselves than any other group).

Externalizers' wider mood variation should be positively associated with a strong peer orientation (more time spent in peer related activities than other clinical groups) but this should be associated with fewer social skills (getting along with peers) and organized peer activities than any other group according to parent reports of social competence.

Again, **Mixed types** should be be less predictable as a group given that they have not yet clearly opted for one solution (externalizing peer orientation) or the other (internalizing, social withdrawal). Less pronounced internalizing and externalizing patterns of disturbances in peer orientation should be reported by girls and boys, respectively.

Demographic Factors as Mediating Variables

Based on the results of analyses already completed with this sample (Larson & Lapman-Petraitis, submitted for review; Larson, et. al., in press), younger students (10-11 year olds) are expected to report less mood variability than older students (12-15 year olds). Therefore, in most of the hypothesized relationships above concerning psychological states as a function of diagnostic group, effects for younger children should be weaker than for older children. In the sample as a whole, no significant association of other self-reported mood variables with sex or socioeconomic status is predicted. The factor structure of the Child Behavior Checklist (CBCL) varies according to age and sex, taking into account the effects of these variables on the number and clustering of problems reported by parents for boys and girls of different ages (4-11, 12-16). There are also weak effects for socioeconomic status with lower SES parents reporting fewer competencies and more behavior problems than higher SES parents. Clinical status is by far the strongest factor in determining CBCL scores (Achenbach & Edelbrock, 1983) and this is the criterion of principal interest in the present study. However, based on

validation studies with the CBCL and previous research on the demographics of child psychopathology (Rutter, et. al., 1974), lower SES children are expected to be overrepresented in the clinical groups in this study.

CHAPTER III

METHOD

The Larger Project

Data for this dissertation were collected as part of a major study of the daily lives of young adolescents. Students in the fifth through ninth grades were randomly selected from two suburban Chicago school districts. The school districts were located in different communities, one largely white collar and upper middle class, the other blue collar and lower middle class; both communities are predominantly Caucasian. The sample is stratified by grade and sex. Refusal rates were low (24%) suggesting that the sample is representative of the communities from which it was drawn. Participants were paid $8.00 each for completing the week long study. Data collection was carried out in eight waves over two years (summer, fall, winter, spring, 1985-87) to control for seasonal shifts in moods and activities. Comparable numbers of students were included in each cell of the design (grade x sex) in each wave.

The larger project is designed to explore major developmental discontinuities (biological, social and psychological) associated with the transition into adolescence. The primary source of data for this research is the Experience Sampling Method (Csikszentmihaly, Larson, & Graef, 1980; Csikszentmihaly & Larson, 1984, 1987), which, as discussed above, has proven reliable and valid in studies of older adolescents. Participating students were provided with electronic pagers ("beepers") and signaled at

random within two hour intervals seven times per day for seven days providing a maximum of 49 samples of immediate experience. At each signal, participants were instructed to complete a brief questionnaire (duplicated and bound in a pocket size booklet which could be carried easily during the course of daily activities) with items assessing thoughts, location, companions, activities, activation level, and moods (bipolar and unipolar scales). At the end of the week, students filled out additional questionnaires measuring various constructs related to the larger research design and were interviewed about the experiences they reported in the beeper booklets. Parents of each youngster also completed a series of paper and pencil measures concerning themselves, their families and the participant child. School records including grades, standardized test scores, and teacher reports round out this multi-trait, multi-method research effort.

Sample

Characteristics of the sample for the larger study have been summarized by Larson (in press). Although the ESM procedures place a substantial demand on participants, most students invited were able to participate and complete the study. Of the original 688 students invited, 70% (N = 483) completed the study, 24% (N = 166) refused to participate (usually parent (7%) or student (12%)), and 6% (N = 39) were excluded due to poor response rate to beeper signals. The criteria for inclusion in the final sample required a minimum of 15 responses to beeper signals with responses recorded for at least 5% of signals during consecutive time periods when students were actually filling out reports. The "refusal" group did not differ

from the final sample in terms of sex, grade, school, SES, or self-esteem. There was a higher rate of refusal among families with remarried parents. The students excluded because of insufficient data were not different from the final sample with respect to sex, grade or community. However, students who were screened out tended to be from lower SES families with less educated parents and could be described as functioning more poorly on measures of depression, grade point average and teacher ratings of maturity than their peers in the final sample. Unfortunately for the present study, these lower functioning students who seem to self-select out of ESM research are the very children about whom we need more information.

Larson (in press) also assessed the validity and reliability of ESM measures of students' daily experiences. In general, his results indicated that "data obtained by the ESM accurately represents most of the experience of most of the individuals in the target population." Response rates to signals averaged 40 reports for girls and 37 for boys, out of a possible total of 49 (7 signals per day for 7 days). Non-responses occurred across a a wide range of activities according to debriefing interviews with students suggesting no substantial or systematic underreporting of specific activities. No grade or sex differences for non-responses were detected. Carrying a pager during the course of their daily routines was a novel activity for most students. Study related thoughts (2%) and conversations (3.5%) accounted for a noticable proportion of these measures but for less than 1% of their reported activities. Participation in this study was not seen as disruptive or influential in students' ususal moods in school

according to teacher reports. Students' self-reported moods were generally consistent from the first half to the second half of sampling weeks. Finally, students generally rated themselves and their peers as truthful in their responses during debriefing interviews. Older students were somewhat more skeptical about their peers honesty than younger students, but "there was a strong consensus that 'most people told the truth most of the time.'" (p. 15).

Subject selection for this dissertation was contingent on a preliminary analysis of Child Behavior Checklist (Parent form) scores since none of the students in the larger sample were selected according to clinical criteria. Complete CBCL data were available for 463 children. A total problem behavior rating on this measure at or above the 90th percentile (approximately 1.3 S.D.'s above the mean) was used as a cutoff score to provide a pool of youngsters from which to draw members for the clinical groups of interest. This criterion identified 125 students (27%) in the clinical range. Although Achenbach suggests a minimum difference of 10 points between T scores on the Internalizing and Externalizing scales to dichotomize children on this dimension (Achenbach & Edelbrock, 1983, p. 34), only a handful of children in the clinical sample had differences this large. The original design of this study called for 12 clinical groups (3 CBCL categories by 2 age groups by sex). In order to minimize the number of cells in this matrix with N's too small to provide stable measures or adequate statisitical power, a less stringent criterion was selected. Using a minimum difference of 4 points to determine group

membership, 39 Internalizers and 29 Externalizers were identified. McConaughy, Achenbach, & Gent (1988) were able to find some significant contrasts on personality measures between Internalizers and Externalizers using a 5 point difference score. Although this less stringent criterion results in less "pure" types, some compromise was necessary to carry out the design as originally proposed. Those individuals with clinically elevated scores on the total problem behavior scale who could be classified according to this criterion were included in the mixed type group (N=57). Once these clinical groups were defined, a group of children was selected as a normative group from those scoring below the 80th percentile on the total problem behavior scale of the CBCL, for a total of four experimental conditions. This normative group was matched with the clinical group by age, sex, and community. Table 1 presents summary data on CBCL data for the final sample. Seven children with missing data on most other variables (2 from the normative group, 5 from the clinical group) are excluded from this summary and from further analyses.

TABLE 1

Sample Characteristics: Group Means and Contrasts for CBCL Problem T Scores

Groups by Age and Sex	N	Total problems	Internal-izing	External-izing	Mean Difference
Normative Sample	**123**	**48.5**	**49.1**	**48.7**	-
9-11 YR Boys	20	47.5	47.3	48.5	-
9-11 YR Girls	23	46.7	49.7	45.9	-
12-15 YR Boys	47	48.9	49.6	49.9	-
12-15 YR Girls	33	49.9	48.9	48.8	-
Externalizers	**27**	**68.4**	**63.9**	**69.9**	**5.9**
9-11 YR Boys	9	71.3	66.5	72.7	6.2
9-11 YR Girls	5	68.6	64.6	69.4	4.8
12-15 YR Boys	11	67.0	62.6	69.0	6.4
12-15 YR Girls	2	63.0	58.0	63.0	5.0
Mixed Type	**56**	**68.7**	**66.2**	**65.8**	**1.6**
9-11 YR Boys	5	68.6	67.4	67.4	1.2
9-11 YR Girls	10	68.0	66.8	67.1	1.7
12-15 YR Boys	23	69.9	68.5	67.5	1.7
12-15 YR Girls	18	67.5	62.5	62.5	1.6
Internalizers	**37**	**66.5**	**68.1**	**61.1**	**6.9**
9-11 YR Boys	5	67.2	69.8	62.8	7.0
9-11 YR Girls	7	65.8	69.9	62.0	7.9
12-15 YR Boys	13	66.8	69.0	61.5	7.5
12-15 YR Girls	12	66.1	65.4	59.5	5.9
Norm vs. Clinical Groups	**t(239)**	22.99*	21.98*	20.95*	- -
Between Clinical Groups	**F(2,117)**	2.37	6.08+	29.78*	77.45*

+p < .01; *p < .001;

Table 1 shows that the group assignment strategy was successful in creating the desired differences between the normative sample and clinical groups and among clinical groups. All clinical groups have significantly higher mean ratings on all three problem scales than the normative sample. The three clinical groups have comparable means on the Total Problems scale, although the lower mean for Internalizers approaches a significant difference. Multiple range contrasts using the Least Significant Difference method (LSD) show that Externalizers have the highest mean on the externalizing scale and the lowest mean on the internalizing scale ($p < .05$). Internalizers have the highest mean on the internalizing scale and the lowest mean on the externalizing scale ($p < .05$). The Mixed type mean on the internalizing scale is significantly higher than the Externlizers' mean ($p < .05$) but not statistically different from the Internalizers' mean. On the externalizing scale, the mean rating for Mixed types is significantly higher than the Internalizers' mean and significantly lower than the Externalizers' mean ($p < .05$). Absolute differences between mean ratings on the internalizing and externalizing scales are comparable for Internalizers and Externalizers while both of these groups have significantly higher absolute differences than the Mixed group ($p < .05$).

Further inspection of Table 1 reveals the first problem encountered in the attempt to execute the original design of this study which called for 12 clinical groups. Five of the twelve clinical groups have N's less than 10, seriously reducing power in statistical analyses involving these groups. It was decided to exclude these groups and procede with planned

analyses via the following contrasts: 1) Older boys, all groups; 2) Older girls, Normative group v. Mixed type v. Internalizers; 3) Older boys v. Older girls, Normative group v. Mixed type v. Internalizers; 4) Older boys v. Younger boys, Normative group v. Externalizers; 5) Older girls v. Younger girls, Normative group v. Mixed type.

A final consideration with regard to sample characteristics is summarized in Table 2. This table presents the original sample of children with complete CBCL data broken down by Total Problem T score ranges, community, and sex. As predicted, working class boys are over represented in the clinical sample to a significant degree (Chi Square=14.5, $p < .03$). Nearly 40% of working class boys are rated by their parents in the clinical range on the CBCL compared to an average of 24% for the other three groups. This sampling bias is true for both younger and older children. Due to restrictions imposed by sample size, community differences could not be included as a factor in planned analyses. However, the normative sample was matched to the clinical sample on this dimension (as well as by age and sex) so effects due to community differences are taken into account in the analyses that follow.

TABLE 2

Sample Characteristics: Distribution of CBCL Total Problem T-Scores by Community and Sex

CBCL Total Problem T-Score Range	Working Class				Middle Class			
	Boys		Girls		Boys		Girls	
	N	%	N	%	N	%	N	%
Normal (Lo thru 58)	49	10.6	74	16.0	81	17.5	72	15.6
Subclinical (59 thru 62)	16	3.5	11	2.4	14	3.0	20	4.3
Clinical (63 thru Hi)	41	8.9	29	6.3	28	6.1	27	5.8
Total Sample (N=462, 100%)	106	22.9	114	24.7	123	26.6	119	25.8

Constructs and Measures

Psychopathology

The Parent Report form of the Child Behavior Checklist (Achenbach & Edelbrock, 1981) was used in this study to assess clinically significant psychopathology and to classify students according to the internalizing/externalizing dimension. Achenbach and Edelbrock (1983) have chosen parent reports as the major source of information on child behavior problems in their research for the following reasons:

1. Parents are the most universally available informants.
2. Parents are the most knowledgeable about their child's behavior across time and situations.

3. Parents are almost always involved in the evaluation and treatment of their children.
4. Although their reports (like those of all other informants) may be biased, parents' views of their children's behavior are usually crucial in determining what will be done about it.
5. Problems arising in interactions with parents are likely to be especially important for children's long-term adaptation, regardless of what causes the problem.
6. In evaluating outcomes, parents' perceptions of change are important in determining whether further help will be needed or sought. (1983, p. 2).

Furthermore, as noted above (pp. 14-15) both short- and long-term reliability of parent reports compare favorably with ratings made by teachers and mental health workers.

Clinical interviews with parents, consultation with various child mental health professionals and statistical analyses were used to develop a list of 118 problem behaviors, each rated on a 3-point scale (0 = not true of this child; 1 = somewhat or sometimes true of this child; 2 = very true or often true of this child). For the purposes of the larger study, five items (Problem #'s 6, 59, 60, 73, 78) describing extremely pathological behavior (e.g., #78: Smears or plays with bowel movements) were eliminated from the checklist at the request of school officials because it was felt that these items might be disturbing to parents. (Achenbach's manual

suggests that profiles may be plotted and compared to the standardization sample when fewer than eight items have been omitted.) In addition to problem behaviors, the CBCL also includes items relating to social competence. The Social Competence Scales will be discussed below with regard to the measurement of peer involvement. The checklist as used in this research is included in the Appendix A.

Two samples were used in the development of the CBCL. Factor analyses of problem behaviors reported by parents of 2300 children referred for outpatient mental health services (the clinical sample) were performed separately for boys and girls aged 4-5, 6-11, and 12-16. These analyses formed the statistical basis for age and sex specific syndromes identified on the Child Behavior Profile scored from the checklist. Normative data were collected from a random sample of families that approximated the socioeconomic and racial distribution of the clinical sample. Parents in this sample filled out checklists on children who had received no mental health services in the previous year. The distributions of raw scores on each of the previously identified problem behavior scales (syndromes) and for a total behavior problem score for each sex/age group were then used to determine normalized T scores. In a similar fashion, the Internalizing and Externalizing scales were derived from second-order factor analyses of behavior problem scales for each age/sex group from the clinical sample and and normalized T scores were derived from the non-referred sample. Because the Internalizing and Externalizing scores are positively correlated, Achenbach suggests stringent criteria of at least a 10-point dif-

ference in T scores on these scales and a total problem behavior score above the 90th percentile (T > 63) to classify children in one or the other category. These criteria were modified slightly to select students for the clinical groups as described in the previous section.

The psychometric properties of the CBCL are sound. Interclass correlations between items were in the .90's for mothers and fathers and for mothers completing the CBCL at one week intervals (clinical sample). The ICC for mothers' ratings of individual behavior problems over a three month interval was .838. Test-retest reliability calculated for scale scores and total problem behavior scores based on mothers' ratings over a one week period produced a median Pearson correlation of .89; three month stability for an inpatient sample averaged .74 for parent ratings while six month test-retest correlations for parent ratings of an outpatient sample averaged in the .60's. The reliability estimates for the Social Competence items are similar. With respect to content validity, 116 of the 118 problem behaviors and all 20 of the social competence items were significantly associated ($p < .01$) with clinical status established independently of the CBCL. Construct validity was assessed via comparisons with two other widely used behavior rating scales, the Connors Parent Questionnaire and the Quay-Peterson Revised Behavior Problem Checklist. Total problem behavior scores on the CBCL were significantly correlated with these scales (boys: .77, .71; girls: .91, .92) as were comparable subscales of the three instruments. Finally, criterion-related validity

of the CBCL was supported by its ability to discriminate ($p < .001$) between demographically matched groups of referred and non-referred children for all age and sex groups on all Profile scores.

The CBCL has been used widely in clinical research. In the most recent manual (1983) Achenbach cites over 80 studies that have included it. Like its counterpart in the assessment of adult psychopathology, the Minnesota Multiphasic Personality Inventory, the CBCL has been criticized for its lack of utility in research with samples of people who have not been referred for mental health problems (Noll, 1988). Nonetheless, this instrument did identify a sufficient number of children with clinically significant behavior problems to carry out most of the research design as planned.

Mood variables

Data from the experience sampling method (ESM) is used to assess patterns of emotion and mood variability among participants. Each time students were signaled, they were instructed to fill out a standard questionnaire which included 12 unipolar items rating current feelings on a 4-point scale (very much to not at all) and 6 semantic differential items, 3 measuring affect (happy-unhappy; irritable-cheerful; friendly-angry) and 3 measuring arousal (drowsy-alert; weak-strong; excited-bored), rating these dimensions on a 7-point scale. The unipolar items were varied across reports and across waves of data collection while the semantic differential items remained constant throughout the larger study.

Previous research has shown that these mood items possess adequate measurement properties. Average responses, variance in responses, intercorelations between items and inter-individual differences have been found to be very stable from the first to the last half of the week participants are signaled. (Larson & Csikszentmihaly, 1983, 1987). As in previous work with these variables, this study will be concerned with both average mood states and with variance in emotional experience.

1. Patterns of emotion

In order to adapt the ESM mood data to a form compatible with the differential emotions model, individual mood items were matched apriori to selected dimensions of the Differential Emotions Scale as follows:

DES Scale:	**ESM Item: Unipolar(U)/Bipolar(B)**
Joy	Happy(B), Cheerful(B), Great(U)
Interest	Interested(U), Excited(B), Alert(B)
Sadness	Disappointed(U), Unhappy(B), Lonely(U)
Anger	Angry(B), Irritable(B), Frustrated/Mad(U)
Shame/Shyness	Embarrassed(U), Awkward(U)
Guilt	Guilty(U), Sorry(U)
Fear	Nervous(U), Worried(U)

Inasmuch as there are no ESM items corresponding to the DES scales for Surprise, Contempt or Disgust, these emotions will not be considered in analyses of patterns of emotion. Most of the unipolar items listed above were used in all versions of the beeper questionnaire. "Mad" replaces "Frustrated" in in the last four waves; "Guilty" is used in 5 out of 8 waves. Responses to unipolar items were assigned values from 1 (not at all) to 4 (very much).

Average responses to these items tend to be skewed toward the low end of the scale, i.e., endorsements of 3 or 4 for individual emotions tend to be rare events. Responses to bipolar items were be scored 0 for each item when the student circled "neither", 1, 2 or 3 if the student circled "some", "quite" or "very" for one pole of the item and 0 for the unendorsed pole of the item, e.g., a response to happy-unhappy endorsed as "very" on the happy end of the differential was coded as a 3 for happy and a 0 for unhappy. To test hypotheses related to differential emotions theory, each student's average responses over the course of the week (40-50 self-reports) to the items constituting each emotion scale were aggregated to produce a mean rating for that emotion. Distributions of scores on five of these seven scales were extremely positively skewed (Sadness, Anger, Shame, Guilt, and Fear) requiring log transformations to approach more normal distributions. Since the scales did not have equal metrics, they were further translated into z-scores using the median scores and standard deviations from the original sample of 463 students. An estimate of internal consistency, coefficient alpha, was calculated for each aggregated, transformed scale. Alphas ranged from .49 for Anger (using Frustrated; .58 using Mad) to .85 for Fear. The average alpha coefficient for the seven scales is .73. Z-scores on these scales are used as the basis for comparisons of profiles of average emotional experience characterizing each group.

2. Other dimensions of psychological states

To test hypotheses related to daily moods, average scores for students' self-reports of affect and arousal were computed from responses to the 6 semantic differential items. Each of item is scored on a seven point scale (1=very negative [e.g., drowsy], 4=neither, 7=very positive [e.g., alert]). Summary measures of affect (unhappy-happy; irritable-cheerful; angry-friendly) and arousal (drowsy-alert; weak-strong; bored-excited) represent average scores on these groups of items. Average variation on each of these dimensions (affect and arousal) is computed as the average of standard deviations on the constituent items. Average attention is measured via responses on a 10 point scale asking, "How well were you paying attention?"

For analyses of psychological states in different social contexts, one other scale was used in addition to average ratings of affect, arousal and attention during periods when students report that they were with family, friends, in class or alone. Students from summer waves need to be excluded from this analysis since they spend no time in class and it is not clear what effect this might have on the distribution of their time and their subjective state in other settings. The additonal measure consists of average responses to an item inquiring about the perceived friendliness of comapnions ("If you were with people, were they: Very Friendly to Very Unfriendly?", 7-point scale). (Note: The original design of this study also called for analysis of an item assessing wish to be alone in each social context, but this

data was not available.)

Social Competence and Peer Orientation

These constructs were assessed using both parent report and self-report data.

1. Social Competence

Selected items from the Social Competence section of the Child Behavior Checklist completed by parents were used to test hypotheses related to involvement with peers. The items consititute the Social scale of this instrument and include participation in organized peer activities, number of friends, frequency of contact with friends, getting along with peers, and playing/working alone. Each of these items are scored on the same 3-point scale as behavior problems; a total score is then computed which is compared to age specific norms and translated into a T score for use in group comparisons.

2. Peer Orientation

Self-reports of activities solely involving peers (no adult supervision) and thoughts or conversations about peer activities (before, during, or after actual contact with peers) will be taken from experience sampling data. Simple percentages of time spent interacting with and thinking/talking about peers will be used to examine hypothesized group differences with respect to these variables.

Analysis

Multivariate analysis of variance was used to determine effects of behavior problem type on the seven emotion scales, average affect and arousal, variability of affect and arousal, selected items from parent reports of social competence, and self-report measures of peer orientation. Repeated measures MANOVA's were performed separately for average affect, arousal, attention, perceived friendliness of companions, and time spent with friends using social context (alone, family, class, friends) as the repeated measure. Analysis of variance was used for average attention and T scores on the CBCL social scale. The original plan of analysis intended to examine interactions with age and sex as well, producing a 4 (Norm/Ext/Mixed/Int) by 2 (Age: 9-11, 12-15 Y.O) by 2 (Sex) factorial design. However, only eleven of the sixteen cells in this model contained sufficient N. Because of the requirement in analysis of variance for balanced factors, the eleven groups were included in five different combinations for most analyses. These include a 3 (Norm/Mixed/Int) by 2 (Sex) analysis for 12-15 year olds, separate analsyses of effects of behavior problem type for 12-15 year old boys (Norm/Ext/Mixed/Int) and girls (Norm/Mixed/Int), and two analyses comparing 9-11 and 12-15 year olds by behavior problem type. For boys, this comparison is between Normals and Externalizers, for girls, Normals and Mixed types. These combinations are refered to as "the five contrast groups" for the sake of convenience in the results section. For the analyses involving social context, 9-11 year olds could not be included due to problems with "shrinking cell sizes".

This problem is addressed in more detail in the results section. Pearson-product moment correlations were computed to examine the relationships of social competence/peer orientation variables, psychopathology, and mood variability.

In addition to these omnibus tests for effects of behavior problem type, occasional use is made of post-hoc tests and simple inspection of group means. Although such tests are ususally discouraged in scientific studies, a recent article by Rosnow and Rosenthal (1989) provides some justification for efforts to look beyond dichotomous significance testing in psychological research, especially when sample sizes and anticipated effects are small. Both of these conditions apply to the present study. They remind us that in our efforts to avoid Type I error (failing to reject the null hypothesis when it is false) we often stack the odds in favor of making Type II error (rejecting the hypothesis of no significant differences when they do exist). They provide a table showing the ratio of Type II to Type I error based on sample size and size of expected effects. Using this table, with a sample size close to $N = 200$ and an expectation of small effects ($r = .10$), the present study is 14 times more likey to make a Type II error than a Type I error with p set at .05. These authors do not suggest abandoning this standard of significance. They simply point out that too heavy a reliance on dichotomous significance testing, especially in studies like the present one with considerable constraints on statistical power due to small sample sizes, can lead to overly conservative evaluation of the data at hand. "All the while that a particular predicted pattern

among the means is evident to the naked eye, the standard F-test is often insufficiently illuminating to reject the null hypothesis that several means are statistically equal." (Rosnow and Rosenthal, 1989, p. 1281). The data set analyzed here is quite unique in the body of research on childhood psychopathology in spite of the small sample size. Therefore, an effort is made in the examination of results to point out patterns in the data that seem worthy of note and which may provide leads for other investigators, even if such patterns do not always reach the traditionally accepted level of statistical significance. This is not done as an attempt to "mine" the data for effects where there are none, but more in the spirit of the position taken by Rosnow and Rosenthal (p. 1277), i.e, "there is no sharp line between a 'significant' and 'nonsignificant' difference; significance in statistics, like the significance of a value in the universe of values, varies continuously between the extremes."

CHAPTER IV

RESULTS

Patterns of Emotion

The seven emotion scale ratings for each participant (joy, interest, sadness, anger, etc.) were treated as dependent variables in five separate repeated measures multivariate analysis of variance tests. A repeated measures design was chosen for these data in order to take advantage of MANOVA's capacity to perform profile analysis. Although the results are labeled somewhat differently, profile analysis and repeated measures MANOVA produce identical results. Three questions are addressed by this approach:

1) Parallelism: Are profiles parallel across groups? This test is equivalent to the interaction of the within subjects factor and between subjects factor(s) in a repeated measures design. In the tables of profile analysis results which follow, the column labeled "Parallelism" shows the multivariate test of the hypothesis that there are no differences in the slopes of the profiles of emotion scales (within subjects factor) among the groups examined (between subjects factor).

2) Equality of response means: Are response means equal across dependent variables? This is equivalent to the repeated measures approach to the within subjects factor, i.e., are there any differences among the means for each of the seven emotion scales for the combined sample. This test is similar to the Constant effect in a simple MANOVA design except that it is testing the hypothesis that the average

difference between scale means is zero. Since the dependent variables in the following analyses are z-scores with the mean of the larger sample as their reference point, significant multivariate effects on this dimension indicate deviation of the average emotion profile of the subsample in question from the average emotion profile of the larger sample.

3) Between groups effects: Are average responses across variables equal between groups? This column reflects the test of the hypothesis that there are no differences among the groups examined with regard to the average height of their emotion scale profiles; i.e., it compares the average response across all seven scales among the groups analyzed.

All of these tests are multivariate. Univariate results in MANOVA output for this approach involve transformed variables reflecting the differences between successive scales in the profile; these results are not presented, as one would usually expect in a MANOVA table. The multivariate effects of primary interest in these analyses are the tests of parallelism and between groups effects. These effects will be further decomposed via oneway analysis of variance on z-scored emotion scale means when appropriate. Significant multivariate effects for equality of response means (Scale Means in following tables) reflect deviation of the average emotion profile for all subjects in any given analysis from the average emotion profile of the larger sample. These effects cannot be further analyzed in any straightforward way, but, when significant, confirm an apriori expectation

that the subsamples in this study which include children with moderate levels of psychopathology should report emotion profiles that are different from the larger sample.

Results of profile analyses on emotion scale profiles for 12-15 year olds are presented in Table 3. Emotion scale means for the seven young adolescent groups included in these analyses are presented in Table 4. One young adolescent male in the Externalizing group had to be excluded from these analyses due to missing data on one of the emotion scales, so the N for this cell is reduced by one from the N reported in Table 1. Inspection of group means when this boy's scores on the six other emotion scales are included indicates that his exclusion from these analyses does not affect the group means of young adolescent male Externalizers to a significant degree.

TABLE 3

MANOVA Profile Analysis for Emotion Scales:

12-15 Year Olds

		Multivariate F Tests		
Contrast Groups	Effects	Parallelism	Scale Means	Between Groups
Boys & Girls (N=146)				
Norm/Mixed/Int			4.77***	
	Sex by Group	1.92*		2.29+
	Sex	1.84+		0.00
	Group	1.96*		2.90+
Boys (N=93)				
Norm/Ext/Mixed/Int			7.49***	
	Group	1.29		5.13**
Girls (N=63)				
Norm/Mixed/Int			1.69	
	Group	2.57**		0.00

+p < .10; *p < .05; **p < .01; ***p < .001;

Table 4: Group Means for Emotion Scale Z-Scores: 12-15 Year Olds

Sex	Profile Type	N	Joy	Interest	Sadness	Anger	Shame	Guilt	Fear
Boys		93	-.1906	-.0364	.1241	.1670	.1825	.3973	.0516
	Norm Group	47	-.2250	-.1367	-.0719	-.0944	-.0460	.1337	-.0837
	Externalizers	10	-.8482b,L	-.5464c,L	-.3818L	.1961	-.1093L	.1692	-.3715L
	Mixed	23	.0146*	.1503	.5221a	.4564a	.5594a	.7280a	.1350
	Internalizers	13	.0765*	.3881*H	.5179b	.5780a,H	.5666a,b	.9405a,b,H	.7189a,b,H
Girls		63	.0448	.0921	.4017	.1475	.3753	.4761	.3608
	Norm Group	33	.0692*	.2654*	.3209	-.1046L	.5270	.3695	.4058*
	Mixed	18	-.1242	-.1525	.4299*	.4572a,b	.3008	.7963	.2477
	Internalizers	12	.2312*	-.0174	.5816*	.3762	.0697	.2891	.4066
12-16 Y.O. Sample		156	-.0955	.0155	.2362	.1591	.2604	.4291	.1765
Smallest Signif. Difference+			.4312	.4435	.4495	.4412	.4420	.4629	.4444

L=Lowest score on scale/H=Highest score on scale for entire sample, both age groups.
*p<.05 for mean difference from 12-15 Externalizing Boys.
ap<.05 for mean difference between profile type and norm group of same age & sex.
bp<.05 for mean difference in hypothesized direction from at least one other profile type of same sex.
cp<.05 for mean difference from at least one other profile type in of same sex.
+The smallest significant difference between profile types by LSD multiple range test.

The first profile analysis in Table 3 compares emotion scale profiles for 12-15 year old male and female Normals, Mixed types, and Internalizers. This analysis reveals significant effects of behavior problem type (Group) and the interaction of sex with behavior problem type (Sex by Group). The significant multivariate tests of parallelism ($p < .05$ for both effects) indicate that the profiles of the groups in these analyses are not parallel; the marginally significant between groups F tests ($p < .10$ for Group and Sex by Group) suggest that the average height of emotion scale profiles may not be equivalent. The significant multivariate effect for Scale Means indicates that the average emotion profile for this subsample as a whole deviates from the average emotion profile of the larger sample.

For the interaction of behavior problem type and sex, oneway analysis of variance revealed significant group differences for anger ($F=2.84$, $p < .02$), shame ($F=2.34$, $p < .05$), and guilt ($F=2.54$, $p < .04$). Subsequent contrasts using a Least Significant Difference test (LSD) revealed the following patterns. For anger, Internalizing boys, Mixed boys, and Mixed girls all reported significantly higher means than the Normative groups of boys and girls (LSD, $p < .05$). Internalizing girls reported a mean level of anger comparable to the other clinical groups and higher than their normal peers of both sexes, but this difference was not statistically

significant.[1] For shame, Internalizing boys, Mixed boys and the Normative group of girls had significantly higher means than the Normative group of boys (LSD, $p < .05$). For guilt, Internalizing boys, Mixed boys, and Mixed girls had higher means than the Normative group of boys (LSD, $p < .05$). Internalizing boys also report more guilt than the Normative group of girls at a marginal level of significance (LSD, $p < .10$).

Oneway ANOVA's also revealed marginally significant group differences for sadness ($F=1.94$, $p < .10$) and fear ($F=2.04$, $p < .08$). Subsequent contrasts (LSD) showed that Internalizing girls and Mixed type boys reported significantly higher means on sadness than the Normative group of boys ($p < .05$). The Normative group of boys reported the least sadness compared to the other five groups in these analyses at a marginal level of significance (LSD, $p < .10$). Internalizing boys and Normal girls reported significantly more fear than Normal boys (LSD, $p < .05$). Internalizing girls mean level of fear was comparable to Normal girls, but failed to reach a statistically significant difference from other groups. Finally, Internalizing boys report more fear than Mixed boys at a marginal level of significance (LSD, $p < .10$).

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1 It should be kept in mind that cell sizes exert a considerable influence on the magnitude of the difference needed to reach significance in these tests. Across the seven emotion scales, an average difference of .42 is significant ($p < .05$) for LSD contrasts between the two largest groups (Normative boys, $N=47$; Normative girls, $N=33$) whereas an average difference of .75 is necessary to reach this significance level for contrasts between the two smallest groups (Internalizing girls, $N=12$; Internalizing boys, $N=13$). This issue of diminished power to reject the null hypothesis of no differences between groups due to small cell sizes, even when observed differences are considerable, is an unfortunate but pervasive problem for this study.

The marginally significant effect of sex in Table 3 was due to the combined girls groups reporting somewhat higher means than the combined boys groups on 6 out of 7 emotion scales. However, univariate analyses of these scales showed no statistically significant differences. The observed differences were due to a mathematical averaging effect. The profiles of the two clinical groups of boys (Mixed, Internalizing) are really more similar to the emotion profiles of all three girls' groups than they are to the profile of the Normative group of boys. These patterns are obscured when the groups are dichotomized by sex.

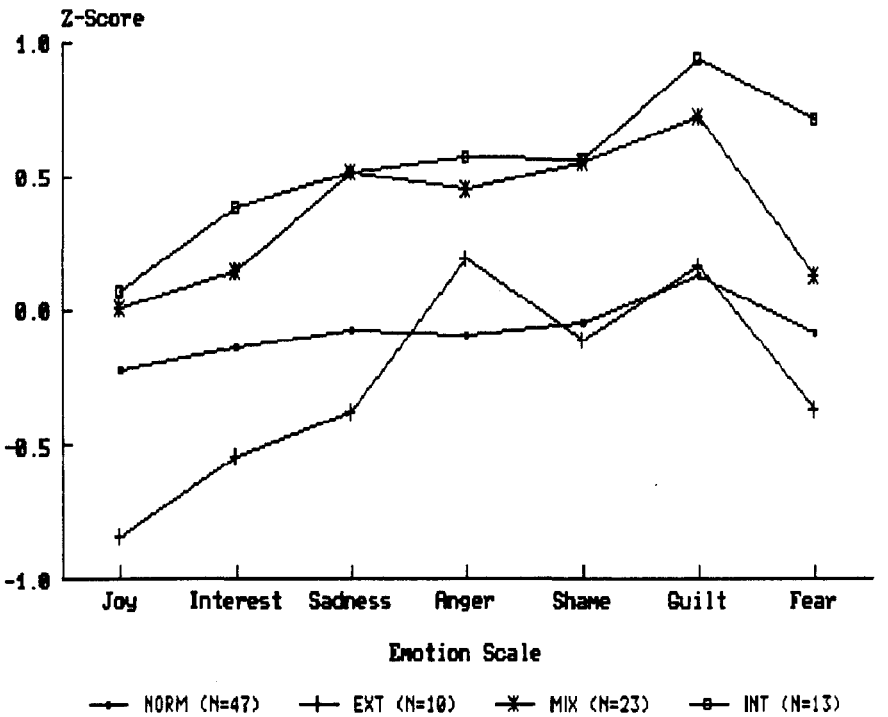
The main effect of behavior problem type (profile analysis "Group" effect in Table 3) was also subjected to oneway analysis of variance. Significant between groups effects were indicated for sadness ($F=3.26$, $p < .05$), anger ($F=7.08$, $p < .002$), and guilt ($F=4.37$, $p < .02$). Mixed types and Internalizers had significantly higher means than the Normative group on sadness and anger (LSD, $p < .05$). Mixed types also reported a higher mean on guilt than Normals (LSD, $p < .05$), while Internalizers' mean on this scale was higher than the Normative group at a marginal level of significance (LSD, $p < .10$). Although the oneway ANOVA for fear was not significant ($F=2.11$, $p = .12$), LSD contrasts did show a significant difference on this scale with Internalizers reporting more fear than Normals. However, these differences are really only mathematical on all emotion scales except anger; they represent an averaging effect wherein the mean scores for the Normative group of girls are pulled down by the lower mean scores for the Normative group of boys. In short, the significant

effect of behavior problem type (Group) in the first profile analysis presented in Table 3 is confounded by the interaction effects discussed above. Anger is the only emotion that clearly distinguishes three of the four 12-15 year old clinical groups from their peers in the Normative groups in these analyses. This finding, as well as other patterns in 12-15 year old cohort's emotion profiles, are related to hypothesized patterns of emotion in the following discussion of the two remaining profile analyses in Table 3 which look at 12-15 year old boys and girls separately.

Figure 1 illustrates the emotion profiles for 12-15 year old boys by clinical group. The largest multivariate effects of all profile analyses were obtained for this cohort, which included young adolescent male Externalizers in addition to the three other groups of 12-15 year old boys. Results of oneway ANOVA's identified significant between groups differences on five of the seven emotion scales: sadness ($F=3.46$, $p < .02$); anger ($F=2.83$, $p < .05$); shame ($F=3.37$, $p < .02$); guilt ($F=3.27$, $p < .03$); fear ($F=3.30$, $p < .03$). Analyses of the two remaining scales showed marginally significant between groups differences: joy ($F=2.31$, $p < .09$); interest ($F=2.53$, $p < .07$).

FIGURE 1

Mean Emotion Scale Z-Scores for 12-15 Y.O. Boys by Clinical Group



The profile of emotions observed for Internalizers in this cohort approximated the hypothesized pattern of emotions (predominant emotions: sadness and fear, higher than any other group; as well as high guilt and shame, low joy and interest) more closely than was true for any other group. As predicted, young adolescent male Internalizers' mean report of fear was significantly higher than the mean for the Normative and Externalizing groups of older boys according to Least Significant Difference (LSD) contrasts ($p < .05$); the mean difference for fear between Internalizers and Mixed types was marginally significant ($p < .10$). Also as predicted, Internalizers' mean score on the sadness scale was significantly higher than the Externalizers' mean (LSD, $p < .05$), and approached a significant difference from the Normative group mean (LSD, $p < .10$). Internalizers also reported significantly higher means on shame and guilt than the Normative group (LSD, $p < .05$) while differences between Internalizers and Externalizers on these two scales were marginally significant (LSD, $p < .10$). Contrary to hypothesis, Internalizers also reported the highest mean experiences of anger among the young adolescent male groups, significantly higher than the 12-15 year old male Normative group mean (LSD, $p < .05$). Also contrary to hypothesis, Internalizers reported significantly more joy and interest than Externalizers (LSD, $p < .05$), and more interest than Normals at a marginal level of significance (LSD, $p < .10$).

As suggested by inspection of Figure 1, the pattern of emotions for 12-15 year old male Mixed types was virtually identical to that of

Internalizers except for the fear scale where Internalizers reported a higher mean at a marginal significance level (LSD, $p < .10$). Young adolescent male Mixes types reported significantly higher mean levels of guilt, shame, sadness, and anger than young adolescent Normals (LSD, $p < .05$). They also report significantly higher means on joy, interest and sadness than Externalizers (LSD, $p < .05$) and more shame than Externalizers at a marginal level of significance (LSD, $p < .10$). The male Mixed group was predicted to report more anger than any other group except Externalizers, but this was not the case. Young adolescent male Internalizers and Mixed types report comparable levels of anger and all other emotions with the exception of fear. Looking back at Table 1, perhaps this is not surprising since CBCL T scores on the Internalizing Scale are quite similar for Internalizers and Mixed types.

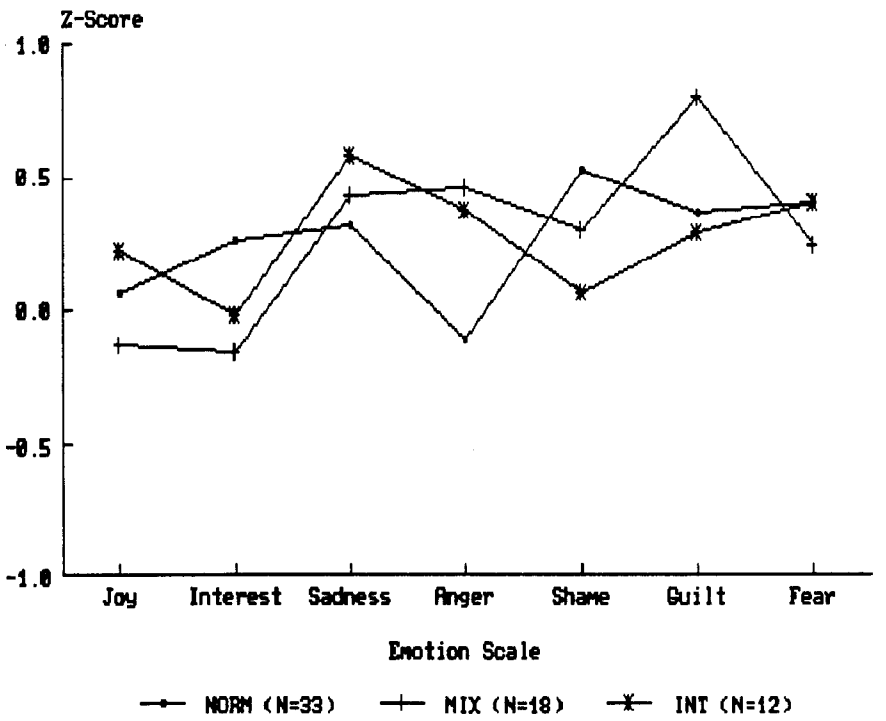
The pattern of emotions for young adolescent male Externalizers is statistically identical to that of their male peers in the Normative group on all but one emotion scale, in spite of the apparent differences in their emotion profiles as depicted in Figure 1. As predicted, Externalizers reported diminished joy, significantly less than the three other groups of older boys ($p < .05$) and their mean score on the guilt scale was lower than Internalizers at a marginal level of significance (LSD, $p < .10$). However, contrary to hypothesis, Externalizers reported guilt as their second highest emotion scale. They also reported the lowest level of fear among all groups although the mean on this scale was significantly different only when compared to the Internalizers' mean on this scale (LSD, $p < .05$).

While the Externalizers' emotion profile shows anger as their most predominant emotion, as predicted, and they did report more anger than the Normative group, the difference was not significant and their mean on this scale was similar to but less than the means for Internalizers and Mixed types. This finding contradicts the prediction that Externalizers would report the highest mean on the anger scale compared to all other groups. Although the pattern of emotion scales for Externalizing 12-15 year old males was similar in some respects to that predicted for them (high anger; low guilt, shame, and joy), the average magnitude of their subjective emotional experience was not statistically different from their normal peers.

Emotion scale profiles for the three young adolescent female groups are presented in Figure 2. This figure illustrates the virtual absence of overall differences in the average height of group profiles as indicated by the test for between groups effects for this cohort in Table 3 ($\underline{F}$=0.00). The test for parallelism was significant. However, subsequent contrasts revealed significant differences on only one emotion scale. The 12-15 year old female Mixed type group reported a higher mean on anger than their peers in the Normative group (LSD, $\underline{p} < .05$). Internalizing girls reported a higher mean on anger than the Normative group but this was not statistically significant. Internalizing girls also reported an average experience of sadness higher than any of their other emotion scales and with respect to other girls, as predicted, but the magnitude of these differences was not significant. No predicted differences reached significance for this cohort.

FIGURE 2

Mean Emotion Scale Z-Scores for 12-15 Y.O. Girls by Clinical Group



To summarize the results of emotion scale profile analysis for 12-15 year olds, hypothesized differences in the emotional experience of different behavior problem types were found at a significant level only for male Internalizers compared to their male peers and some of the significant findings for this group were contrary to hypothesis. Significant multivariate effects of behavior problem type and the interaction of behavior problem type with sex were obtained in the analysis of 12-15 year old male and female groups emotion profiles. However, closer inspection revealed that these effects were due in the largest part to differences in the male cohort. Indeed, the significant between groups effect attributable to different patterns of emotion among the subgroups in the male cohort account for the weaker effects observed in the other analyses in which they were included. Mixed type and Internalizing boys are more similar in their profiles to each other and to all three groups of girls than to the Normative group of boys, while the three groups of girls differ only on the anger scale. Shame and guilt are more characteristic of Internalizing and Mixed type boys than is true of the Normative group of boys; Mixed type and normal girls report elevated levels of shame similar to male Internalizers and Mixed types while Mixed type girls report guilt at a level comparable to these two clinical groups of boys. The one emotion that significantly distinguishes the young adolescent clinical groups from their peers is anger. Male Externalizers report anger as their most dominant emotion, but their average on this scale is the lowest among the clinical groups and not significantly different from their normal peers, contrary to what

had been predicted for them. Externalizers also reported guilt as their second most predominant emotion contradicting the prediction that this emotion would be diminished in their profile. In short, little support for hypothesized differences was found in these analyses.

The two remaining profile analyses of emotion scales to be reported in this section are presented in Table 5. Group means on these scales for 9-11 year old children are presented in Table 6. The first profile analysis compared 9-11 and 12-15 year old Externalizing boys with each other and with their peers in the male Normative groups. As shown in Table 5, the only significant contrast among these groups was for the between groups effect of age. Oneway analysis of variance on the seven emotion scales revealed the following differences. 12-15 year old boys reported significantly less joy ($F=6.55$, $p < .02$) interest ($F=4.26$, $p < .05$), and shame ($F=10.45$, $p < .002$) than 9-11 year old boys. Differences in the same direction for sadness ($F=3.63$, $p < .07$) and guilt ($F=3.41$, $p < .07$) were indicated at a marginal level of significance. Paradoxically and contrary to hypothesis, inspection of Tables 4 and 6 shows that 9-11 year old Externalizers reported the highest mean on sadness of the 11 groups in this study. Otherwise their profile is similar to that of their normal male peers and, on the average, hovers close to a z-score of zero. The significant multivariate effect for Scale Means is due to the influence of the lower average emotion scale scores of the 12-15 year old boys.

TABLE 5

MANOVA Profile Analysis for Emotion Scales:

9-11 Versus 12-15 Year Olds

			Multivariate F Tests	
Contrast Groups	Effects	Parallelism	Scale Means	Between Groups
Boys: Norm/Ext (N=86)			3.28**	
	Age by Group	1.05		.40
	Age	1.45		6.78*
	Group	.79		.12
Girls: Norm/Mixed (N=84)			2.89*	
	Age by Group	1.18		.08
	Age	1.37		.18
	Group	1.58		.04

*p < .05; **p < .01;

Table 6: Group Means for Emotion Scale Z-Scores: 9-11 Year Olds

Sex	Profile Type	N	Joy	Interest	Sadness	Anger	Shame	Guilt	Fear
Boys		29	.2244	.2353	.3130	.1480	.6395	.5918	.1992
	Norm Group	20	.2780	.2484	.1884	.0763	.6648H	.6027	.1713
	Externalizers	9	.1053	.2062	.5897H	.3074	.5834	.5674	.2613
Girls		33	.3552	.2436	.0422	-.0541	.4220	.2358	.3018
	Norm Group	23	.4066H	.2407	-.0017	-.0623	.4244	.2920	.4047
	Mixed	10	.2372	.2503	.1432	-.0352	.4166	.1064L	.0651
9-11 Y.O. Sample		62	.2940	.2397	.1689	.0404	.5238	.4023	.2538
Smallest Signif. Difference+			.4312	.4435	.4495	.4412	.4420	.4629	.4444

Note: No two groups are different at .05 level of significance.
L=Lowest score on scale/H=Highest score on scale for entire sample, both age groups.
+The smallest significant difference between profile types by LSD multiple range test.

The profile analysis comparing normal and Mixed type girls by age was significant only with respect to scale means, i.e., average responses to the seven emotion scales for the combined groups were not identical to the population means for these scales. Multivariate tests of differences among these groups were not significant. Exploratory univariate tests suggested weak effects on anger and guilt ($p < .10$), with older Mixed type girls having higher means on these scales than the other three groups of girls, providing partial explanation for the significant Scale Means effect.

One final set of analyses was conducted to examine possible differences among all eleven groups simultaneously on each emotion scale since these groups could not be included together in any one profile analysis. These post-hoc tests consisted of oneway ANOVAs on each emotion scale with the eleven groups (seven 12-15 year old groups; four 9-11 year old groups) as the between subjects factor. Although these tests are not strictly appropriate given the lack of significant results among the preceding multivariate analyses, at least one interesting observation emerges that is not as clear in the preceding discussion. Male Externalizers in the 12-15 year old cohort report less joy, interest, sadness, shame, and fear than any other group. Of particular note is the finding that they reported significantly less joy than 8 of the other 10 groups (LSD, $p < .05$); their difference from the remaining two groups was marginally significant (LSD, $p < .10$). While young adolescent male Externalizers were statistically different from the Normative group of their male peers only on the measure of joy, the overall pattern of the Externalizers' profile suggests a

considerable diminution or flattening of self-reported emotional experience for this group of boys compared to other children in the sample, i.e., with the exception of anger, they report feeling less of both positive and negative emotions than most other children.

To summarize the findings presented in this section, few hypothesized differences were observed among the emotion profiles of the 11 groups studied. Notwithstanding the issue of small cell sizes which limit the statistical power of the analyses reported to detect subtle differences, the effects that were observed were limited primarily to the young adolescent cohort of boys. While their profiles were graphically and statistically distinct, these distinctions tend to appear less clear when the profiles of all eleven groups are compared simultaneously. This is not to say that the profiles of all groups are identical. Compared to their 9-11 year old counterparts, the 12-15 year old clinical groups are distinguished from their normal peers by higher self-reports of anger and this difference is, on the average, one-half of a standard deviation above the mean for the sample as a whole. Young adolescent male Internalizers and Mixed types are more similar than was expected and share some similarities with young adolescent female Mixed types in that their emotion profiles tend to be characterized by significantly higher levels of guilt than any other groups. Young adolescent male Externalizers are remarkable for their joylessness, even more so than was predicted; the remainder of their emotional profile is statistically similar to that of their peers in the young adolescent male Normative group and both are predominantly below the mean level of

subjective emotional experience reported by the larger sample. In short, hypothesized differences in overall patterns of emotion were observed to a significant degree only for young adolescent male Internalizers and to a lesser extent for young adolescent male Mixed types and Externalizers. Preadolescent groups of both sexes and young adolescent female groups were generally quite similar in their self-reported emotion profiles, within their respective cohorts and compared to one another.

Daily Psychological States

Table 7 presents the results of the five MANOVAs which treated average self-reports of affect and arousal as the dependent variables using the same between groups factors as the previous set of analyses. Group means for average affect and arousal are displayed in Table 8. There was one significant multivariate effect for behavior problem type (Group in Table 7). This occurred for the young adolescent male group. This effect was not reflected in significant univariate F tests although LSD contrasts indicate that Externalizers report lower average affect (M=4.31) than Mixed types (M=4.86) and the Normative group (M=4.84) ($p < .05$). Externalizers' average affect was lower than Internalizers'(M=4.81) as well at a marginal level of significance (LSD, $p < .10$). There is a trend ($p < .10$) in the same direction for affect in the contrast between Externalizing boys and their normal peers combined across age groups (fourth contrast in Table 7), but this is entirely due to the lower mean of the older Externalizing

boys. In fact, younger Externalizing boys reported the highest mean for average arousal the second highest mean on affect among the six groups of boys in this sample.

TABLE 7

MANOVA Results for Average Mood Variables

Contrast Groups	Effects	Multivariate F	Univariate F Affect	Univariate F Arousal
12-15 Y.O. Boys/Girls				
Norm/Mixed/Int (N=146)				
	Sex by Group	.40	.49	.20
	Sex	5.88**	5.44*	2.15
	Group	.78	.46	1.30
12-15 Y.O. Boys				
Norm/Ext/Mixed/Int (N=94)				
	Group	2.07*	2.00	1.43
12-15 Y.O. Girls				
Norm/Mixed/Int (N=63)				
	Group	.34	.79	.51
Boys 9-11/12-15 Y.O.				
Norm/Ext (N=87)				
	Age by Group	1.75	2.17	2.14
	Age	3.75*	5.41*	1.81
	Group	2.60+	2.92+	.14
Girls 9-11/12-15 Y.O.				
Norm/Mixed (N=84)				
	Age by Group	.11	.27	.12
	Age	1.80	2.95+	.53
	Group	.38	.81	.51

+$p < .10$; *$p < .05$; **$p < .01$

TABLE 8

Group Means for Average Affect, Arousal and Attention

Age	Sex	Profile Type	N	Affect	Arousal	Attention
12-15 Yr. Olds			157	4.92	4.48	6.61
	Boys		94	4.78	4.54	6.69
		Norm Group	47	4.85	4.60	6.55
		Externalizers	11	4.31	4.18	6.94
		Mixed	23	4.86	4.41	6.51
		Internalizers	13	4.81	4.81	7.27
	Girls		63	5.12	4.40	6.49
		Norm Group	33	5.22	4.45	6.66
		Mixed	18	4.96	4.26	5.73
		Internalizers	12	5.07	4.44	7.10
9-11 Yr. Olds			62	5.27	4.64	7.06
	Boys		29	5.10	4.80	6.73
		Norm Group	20	5.11	4.72	6.59
		Externalizers	9	5.07	4.97	7.04
	Girls		33	5.42	4.51	7.35
		Norm Group	23	5.44	4.53	7.49
		Mixed	10	5.37	4.46	7.03
Total Sample			219	5.02	4.53	6.74

Note: Scale Range for Affect & Arousal = 1 [low] to 7 [high].
Scale Range for Attention = 1 [low] to 10 [high].

Contrary to hypothesis, inspection of group means in Table 8 shows that young adolescent male Externalizers' average arousal ($\underline{M}$=4.17) was the lowest of any of the 11 groups sampled. The difference between average arousal for young adolescent male Externalizers and Internalizers ($\underline{M}$=4.81) was marginally significant (LSD, $\underline{p} < .10$). Other than these findings for young adolescent Externalizers, it must be said that average affect and arousal were quite homogeneous across all other groups, averaging in the neutral to mildly positive range ($\underline{M}$[affect]=5.01, range=4.31 to 5.44; $\underline{M}$[arousal]=4.52, range=4.17 to 4.97), i.e., the data provide no support for hypothesized effects of behavior problem type on average affect or arousal. As found in other research with this sample, younger children and girls tended to report more positive affect than older children and boys, but these were not the effects of most interest to the present study.

Results of ANOVA'S performed on average attention scores for the five contrast groups shown in Table 9 and group means on this variable are shown in Table 8. All but one of these tests failed to reach significance at the .05 level. There was a significant effect of age among the four female groups in the sample. 12-15 year old girls reported lower mean levels of attention than 9-11 year old girls ($\underline{F}(1,79)=5.73$, $\underline{p} < .02$). There was also a trend in this analysis for Mixed type girls of both age groups to report somewhat lower levels of attention than their normal peers ($\underline{F}(1,79)=3.13$, $\underline{p} = .08$). This trend was accounted for primarily by the 12-15 year old Mixed type girls who reported the lowest mean on this variable in the sample as a whole. The lower mean level of attention in

this group was also responsible for weak effects of behavior problem type among 12-15 year old girls ($F(2,59)=2.158$, $p = .13$) and among the 12-15 year olds of both sexes ($F(2,139)=2.718$, $p = .07$). No hypothesized effects of behavior problem type were obtained for this variable.

The final group of analyses of daily psychological states examined mood variability among behavior problem types and the normative groups. Average standard deviations in self-reports of affect and arousal were treated as dependent variables in five separate MANOVA's with the same contrast groups as in previous analyses. MANOVA results for these analyses are presented in Table 10. Group means for variability of affect and arousal are shown in Table 11.

Inspection of Table 10 reveals a significant main effect of behavior problem type for the combined sample of 12-15 year old males and females. Univariate F tests were significant only for affect. The combined group of male and female young adolescent Internalizers reported significantly higher average variability in affect than their normal peers (LSD, $p < .05$). This effect was due to the higher mean variability in affect of female Internalizers; no significant differences emerged among the male groups. There was a weak main effect of sex among young adolescents attributable to girls' slightly higher mean on variability in affect compared to boys.

The significant main effect of behavior problem type among the three groups of young adolescent girls actually accounts for the effects obtained in the first analysis of Table 10. Contrary to hypothesis, inspection of Table 11 shows that young adolescent Internalizing girls reported a greater average standard deviation in their self-reports of affect than any other group. LSD contrasts showed that young adolescent female Internalizers average variability in affect was significantly higher than that of their

normal female peers ($p < .05$). Other than these effects due to the statistical influence of the young adolescent female Internalizers' relatively high mean in these contrasts, an unanticipated finding with respect to apriori hypotheses, no relationship between mood variability and behavior problem type was found in this sample.[2]

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2 This finding led the author to abandon a major analysis that had been included in the original proposal for this dissertation. That analysis would have examined changeability of moods (a beeper level, time-series analysis of attenuation of extreme moods) among behavior problem types and their normal peers. Due to the overwhelming lack of significant differences among groups on person level measures of both average mood states and average mood variability, it was decided that the more complex beeper level analysis was most likely not worth pursuing.

TABLE 10

MANOVA Results for Variability of Affect and Arousal

Contrast Groups	Effects	Multivariate F	Univariate F Affect-S.D.	Univariate F Arous.-S.D.
12-15 Y.O. Boys/Girls				
Norm/Mixed/Int (N=146)				
	Sex by Group	.78	.73	.74
	Sex	2.80+	4.18*	.13
	Group	3.37*	5.95**	.61
12-15 Y.O. Boys				
Norm/Ext/Mixed/Int (N=94)				
	Group	.59	1.10	.64
12-15 Y.O. Girls				
Norm/Mixed/Int (N=63)				
	Group	2.59*	4.36*	.06
Boys 9-11/12-15 Y.O.				
Norm/Ext (N=87)				
	Age by Group	.01	.02	.02
	Age	.15	.06	.05
	Group	.15	.23	.26
Girls 9-11/12-15 Y.O.				
Norm/Mixed (N=84)				
	Age by Group	1.56	.23	1.51
	Age	.77	1.39	.06
	Group	.71	1.04	1.12

+$p < .10$; *$p < .05$; **$p < .01$

TABLE 11

Group Means for Variability of Affect and Arousal

Age	Sex	Profile Type	N	Affect-S.D.	Arousal-S.D
12-15 Yr. Olds			157	1.03	1.16
	Boys		94	.98	1.13
		Norm Group	47	.91	1.08
		Externalizers	11	.98	1.17
		Mixed	23	1.02	1.15
		Internalizers	13	1.14	1.28
	Girls		63	1.11	1.19
		Norm Group	33	1.00	1.19
		Mixed	18	1.13	1.17
		Internalizers	12	1.36	1.23
9-11 Yr. Olds			62	.96	1.09
	Boys		29	.97	1.09
		Norm Group	20	.95	1.07
		Externalizers	9	.99	1.12
	Girls		33	.96	1.10
		Norm Group	23	.95	1.02
		Mixed	10	.99	1.29
Total Sample			219	1.01	1.14

The results presented in this section lead to the conclusion that, with a few exceptions, the average daily subjective emotional experiences of older children and young adolescents do not vary much as a function of behavior problem syndromes. Pearson bivariate correlations between the seven mood variables analyzed in this section and CBCL problem scale T scores for the larger sample (N=456) reflect this absence of association as well. Only average ratings of affect are significantly correlated with parent reports of child behavior problems. These relationships are weak (r = -.17 for affect and Total problems; r = -.15 for affect and Internalizing problems; r = -.17 for affect and Externalizing problems) in spite of the highly significant p values due to a large N. Age and sex are associated with differences in average affect to a slightly greater degree (r's = -.20 and .19, respectively) with young adolescents and boys reporting lower affect. Interactions of age or sex with behavior problem type were not evident in any of the analyses of daily mood states, ruling out a more complex, non-linear interaction of these factors in this sample with respect to these variables. To put these results in perspective, only 11 out of 126 (9%) comparisons of clinical groups and their normal peers produced significant or marginally significant differences.

The differences that did emerge are consistent with the findings presented in the previous section, although they do not provide much support for hypothesized differences. Young adolescent male Externalizers report the lowest affect (hypothesis) and lowest arousal (contrary) of any group. Young adolescent female Mixed types report the lowest average level of

paying attention compared to other groups (hypothesis). Young adolescent Female Internalizers report the greatest variability in their daily affective state (contrary).

Psychological State as a Function of Social Context

The analyses reported in this section examined the interaction of behavior problem type and social context on average affect, arousal, attention, characteristic emotion scales, and perceived friendliness of companions. Due to problems with shrinking cell sizes, the sample of children with complete data for planned analyses of these variables was significantly reduced. This is a common problem in ESM research when testing hypotheses related to situation (Larson & Delespaul, in press). To perform the proposed comparisons of ESM variables when students were alone, with family, in class, and with friends, students from summer waves had to be excluded. Any other student missing a variable in any of the four contexts is also excluded by the MANOVA procedure. For affect and arousal, this reduced the number of students included in previous analyses (N=219) by 31% for comparisons involving all four social contexts (N=150). Cell sizes for the two 9-11 year old clinical groups were diminished considerably (male Externalizers, N=5; female Mixed types, N=8). This effectively eliminated planned contrasts involving 9-11 year olds and reduced the N for male Externalizers such that they were excluded from contrasts involving 12-15 year olds. The problem was compounded with respect to emotion scales since some of these scales contain ESM items that were not included on every beeper response sheet, further increasing

the likelihood of missing data in any given situation and reducing the N for context analysis on emotion scales for the 11 groups included in previous analyses to 96 children with complete data for all seven emotion scales in all four contexts. Cell sizes for the clinical groups were reduced to such a point (maximum = 8 for 12-15 year old Mixed type boys) that planned analyses on characteristic emotion scales were rendered impossible.

Social context analyses were thus performed only for the young adolescent groups, excluding male Externalizers. ESM reports of average affect, arousal, attention, and perceived friendliness of companions were individually subjected to repeated measures MANOVAs with behavior problem type (Norm Group, Mixed type, Internalizers) and sex as the between subjects factors and social context (Alone, Family, Class, Friends) as the within subjects factor.

Table 12 displays the multivariate results for the analyses of affect, arousal, and attention. Group means for these variables in each context are reported in Appendix C. N's vary slightly due to missing data. The effect of context in all of the analyses of affect and arousal was highly significant. No significant interactions of social context and behavior problem type were found for any of these repeated measures MANOVAs on average affect, arousal, or attention. Inspection of Tables 1 and 2 in Appendix C shows that the pattern of means on for average affect and arousal in the sample as a whole shows a gradually increasing experience of positive affect from time spent alone to time spent with friends. The general pattern for arousal is the same. This is similar to the findings of Larson and Lapman-Petraitis (in press) in their study of emotional states associated with the onset of adolescence using data from the larger sample.

Although not significant, the trend for young adolescent Internalizing girls was quite the opposite of what had been hypothesized for this group. They reported the lowest average affect and arousal when alone and showed a steeper increase across social contexts, reporting the highest affect and arousal when with friends compared to other groups[3]. The increasing slope of average affect and arousal for male Internalizers is not as steep, but also contrary to hypothesis.

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3 The difference between average affect during time alone versus time with friends for the total sample in these analyses is .55; for arousal, the difference is .71. The corresponding differences for female Internalizers are 1.40 (affect) and 1.45 (arousal).

TABLE 12

Repeated Measures MANOVA Results for Average Affect, Arousal, and Attention in Different Social Contexts: 12-15 Year Olds

	Multivariate F's		
Effects	Affect	Arousal	Attention
	N=107	N=107	N=106
Group by Sex by Context	1.19	1.48	.89
Sex by Context	1.61	.30	1.19
Group by Context	1.10	.66	1.50
Context	17.26***	14.77***	3.89*

*p < .05; ***p < .001

Note: Group = Norm/Mix/Int.

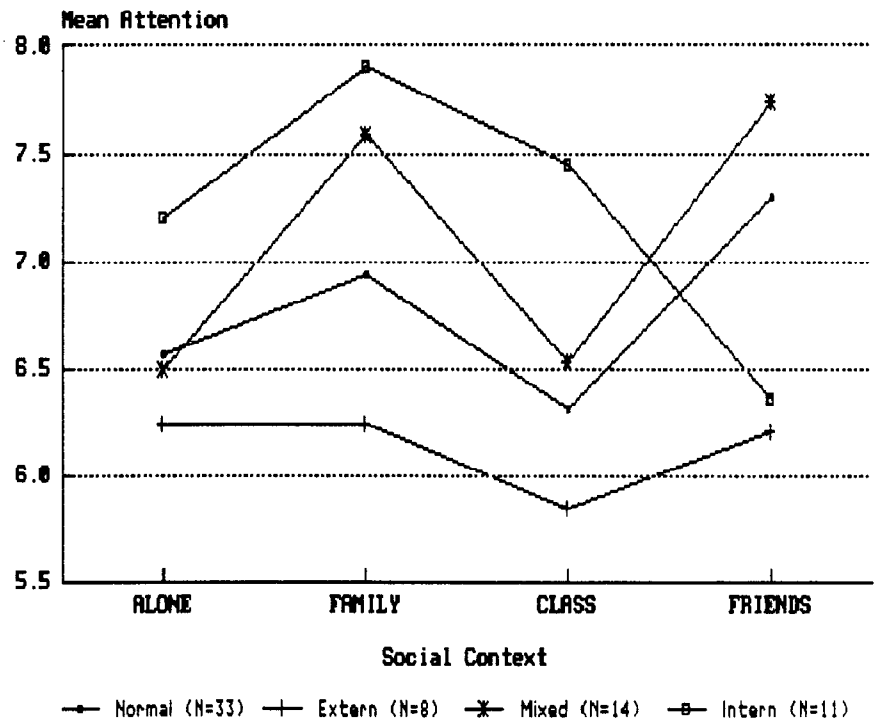
The typical pattern of attention is shown in Figure 3 which presents mean levels of attention for the three groups of young adolescent males across social contexts. The graph is presented to illustrate one interesting trend. First, the typical pattern of attention for both boys and girls in this group consists of waxing and waning levels of attention. Similar to the findings of Larson, Csikszentmihaly, & Graef (1980) for older adolescents, these younger adolescents seem to be most engaged cognitively and affectively in the contexts of being with friends and family, while time alone and in class is characterized by lower levels of cognitive investment. However, the trend for young adolescent male Internalizers

appears to differ from this general pattern. Figure 3 shows that Internalizing boys' self-reports of attention drop quite noticeably in the context of being with friends. While this observation was not supported by statistical significance nor anticipated in apriori hypotheses, it does suggest some differences in the subjective social experiences of this group. Trends for all three young adolescent female groups were much more similar to the general pattern.

FIGURE 3

Average Attention in Different Social Contexts

12-15 Y.O. Boys by Clinical Group



The final set of planned contrasts regarding the effects of social context on psychological state examined the perception of friendliness of companions. Means on this variable for the six young adolescent groups are presented in Appendix C, Table 4. As in the preceding analysis, the repeated measures MANOVA showed no significant interaction of social context and behavior problem type. Results of this analysis are presented in Table 13. Again, the effect of context was highly significant. The trend for the sample as a whole on this measure is similar to that of affect and arousal, i.e., their is a tendency to perceive companions as most friendly during time spent with friends, less so during class and least of all with family. There is also a marginally significant interaction of sex and context. During time spent in class and among friends, girls tend to perceive others as more friendly than during time spent with family.

One last contrast with regard to social context was explored, anticipating the final section of this chapter. An inspection of group mean percentages of time spent in the three social contexts outside of school suggested that Internalizing boys and girls and Externalizing boys reported spending more time alone and less time with friends than their normal peers who report spending approximately equal time in each context.

Three repeated measures MANOVAs were then performed to further analyze these observations for young adolescent students in the fall, winter and spring waves of the study. The repeated measure was simple percentage of time responding to ESM signals in each of three contexts: alone, with family, and with friends (class time was excluded since students have

TABLE 13

Repeated Measures MANOVA Results for Perceived Friendliness of Companions in Different Social Contexts: 12-15 Year Olds

Effects	Multivariate F	Univariate F's	
		Family vs. Class/Frnds	Class vs. Frnds
Group by Sex by Context	1.37	2.12	1.50
Sex by Context	2.83+	3.49+	.74
Group by Context	.69	.67	.95
Context	21.25***	3.74+	28.91***

+$p < .10$; ***$p < .001$

Note: Group = Norm/Mix/Int, (N=109)

little discretion about how much time they spend in this context). Results of these analyses are presented in Table 14. Mean percentages of time spent in these three contexts are presented in Figure 4 for the three groups of both sexes and in Figure 5 for boys. Significant interactions of social context and clinical group were obtained in the MANOVA involving Normal, Mixed, and Internalizing groups of both sexes and on the MANOVA for all four groups of young adolescent boys. For the first analysis, significant univariate effects were obtained for time spent alone (F=5.33, $p < .007$) and time spent with friends (F=4.21, $p < .02$). Subsequent contrasts showed that the Internalizing group (both sexes) spent significantly more time alone and significantly less time with friends than Mixed

types and Normals (LSD, $p < .05$). For the second analysis (12-15 year old boys), univariate tests were also significant for time spent alone ($F=3.50$, $p < .03$) and time with friends ($F=5.79$, $p < .002$). Subsequent contrasts showed that both Internalizing and Externalizing boys spent significantly more time alone and less time with friends than Mixed types and Normals (LSD, $p < .05$). The trend for Internalizing girls was in the same direction but of a smaller magnitude (27% time alone, 18% time with friends) and not statistically significant.

TABLE 14

Repeated Measures MANOVA Results for Percentage of Time Spent in Different Social Contexts: 12-15 Year Olds

Contrast Groups	Effects	Multivariate F
12-15 Y.O. Boys/Girls	Group by Sex by Context	1.10
Norm/Mix/Int	Sex by Context	1.31
(N=108)	Group by Context	3.40*
	Context	1.87
12-15 Y.O. Boys		
Norm/Ext/Mix/Int	Group by Context	2.88*
(N=67)	Context	5.57**
12-15 Y.O. Girls		
Norm/Mix/Int	Group by Context	1.14
(N=49)	Context	1.00

*$p < .05$; **$p < .01$

FIGURE 4

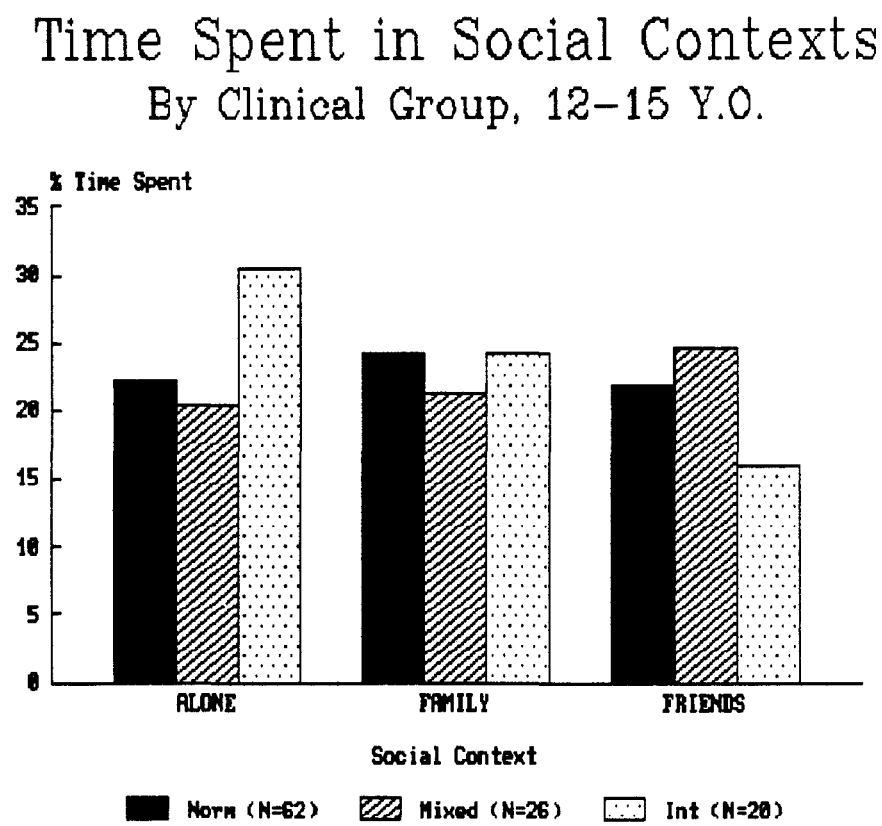
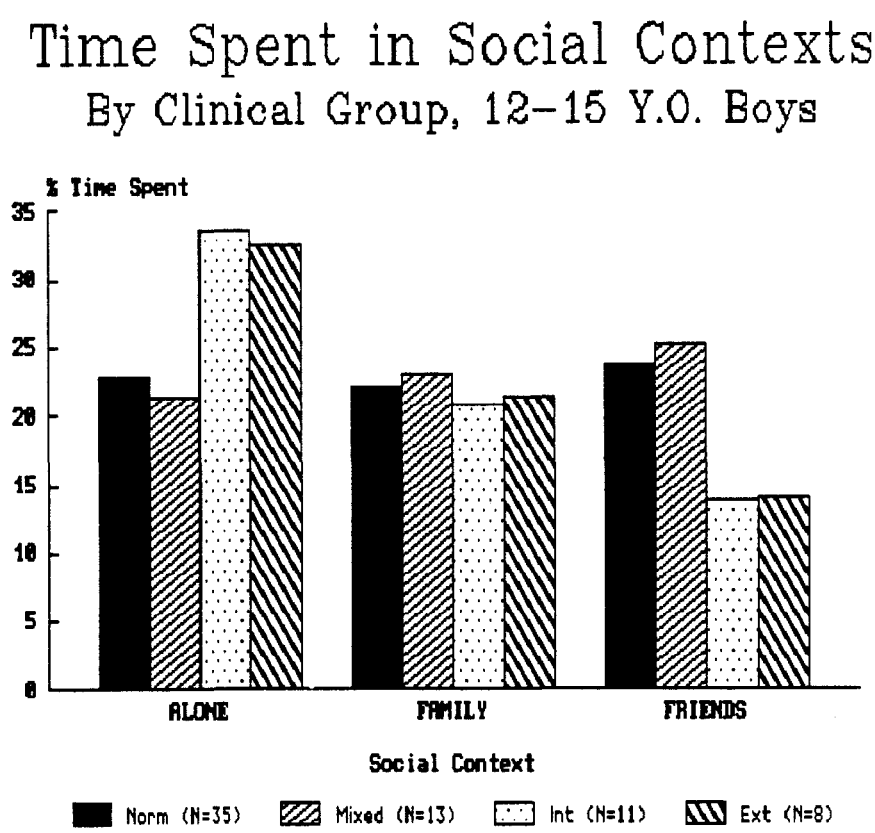

Time Spent in Social Contexts
By Clinical Group, 12-15 Y.O.
% Time Spent
35
30
25
20
15
10
5
0
ALONE
FAMILY
FRIENDS
Social Context
Norm (N=62)
Mixed (N=26)
Int (N=20)

FIGURE 5


Time Spent in Social Contexts
By Clinical Group, 12-15 Y.O. Boys
% Time Spent
35
30
25
20
15
10
5
0
ALONE
FAMILY
FRIENDS
Social Context
Norm (N=35)
Mixed (N=13)
Int (N=11)
Ext (N=8)

In summary, no significant effects of behavior problem type were observed for self-reports of young adolescents' psychological state in different social contexts. The only significant finding in this section came from an analysis of time spent in different social contexts that was not part of the original design for this study but was suggested by inspection of group means on this variable. Young adolescent male Internalizers and Externalizers spent significantly less time with friends than Mixed type or normal boys. The similarity of these two groups on this dimension is contrary to the pattern of social interaction that had been predicted for them. Internalizers were expected to be socially withdrawn, but Externalizers were expected to be more gregarious.

In the absence of significant multivariate effects, interpretation of group mean differences is not considered appropriate. However, inspection of the data for young adolescent Internalizers suggested some patterns in their psychological experience that are worth noting and similar to findings from the depression study completed with this sample (Larson, et. al., in press). Internalizing boys reported diminished attention during time spent with friends, suggesting some further evidence of psychological difficulty among this group during time spent with friends in addition to the significant finding that they spend less time with friends. Female Internalizers reported more varied subjective emotional states across social contexts than was expected. Trends in the data for this group suggest that they do not enjoy time spent by themselves and experience their most positive emotional states when they are with friends. They do appear to spend

somewhat more time alone and less time with friends than the other two groups of girls. The conclusions that may be drawn from these observations are quite tentative, however, as they are based on apparent group differences that are without significant statistical support.

Social Competence and Peer Orientation

The final set of analyses tested the hypothesis that clinical groups would be rated by their parents as less socially competent than their normal counterparts and that this deficit would be related to differences in self reports of peer related activities. T scores on the social dimension of the CBCL Social Competence Scales completed by parents served as the dependent variable in separate ANOVA's for the five contrast groups. Selected items from this scale pertinent to predicted differences among behavior problem types were further analyzed using MANOVAs with the five contrast groups as between subjects factors. The individual social scale items included scores for participation in clubs and organizations, number of friends, frequency of contact with friends, ratings of how well the child gets along with peers, and how well he/she plays and works alone. Self reports of time spent with friends, percentage of activities involving peer interaction without adult supervision, and time spent thinking or conversing about friends were treated as dependent variables in a separate series of MANOVAs.

Results of ANOVA's on social competence T-scores are presented in Table 15 and group means for this variable are shown in Tables 16 (12-15 year olds) and 17 (9-11 year olds).

TABLE 15

ANOVA Results for CBCL Social Scale T-Scores:
Parent Report of Social Competence

Contrast Groups	Effects	F
12-15 Y.O. Boys/Girls	Sex by Group	10.60***
Norm/Mixed/Int	Sex	10.94**
(N=146)	Group	7.39**
12-15 Y.O. Boys		
Norm/Ext/Mixed/Int	Group	3.44*
(N=93)		
12-15 Y.O. Girls		
Norm/Mixed/Int	Group	17.07***
(N=64)		
Boys 9-11/12-15 Y.O.	Age by Group	.86
Norm/Ext	Age	6.15*
(N=86)	Group	11.57**
Girls 9-11/12-15 Y.O.	Age by Group	5.18*
Norm/Mixed	Age	.09
(N=85)	Group	14.40***

*p < .05; **p < .01; ***p < .001

TABLE 16

Group Means for CBCL Social Scale T-Scores on Parent Report of Social Competence: 12-15 Year Olds

Sex	Profile Type	N	Mean T-Score
Boys		93	37.6
	Norm Group	46	39.9
	Externalizers	11	33.7[a]
	Mixed	23	38.3
	Internalizers	13	31.7[a]
Girls		64	42.5[b]
	Norm Group	34	45.5
	Mixed	18	34.3[a]
	Internalizers	12	46.4
12-15 Y.O. Sample		157	39.6

[a] $p < .05$ for difference from Norm Group of same sex.

[b] $p < .001$ for sex difference.

TABLE 17

Group Means for CBCL Social Scale T-Scores on Parent Report of Social Competence: 9-11 Year Olds

Sex	Profile Type	N	Mean T-Score
Boys		29	43.0
	Norm Group	20	46.3
	Externalizers	9	35.7[a]
Girls		33	42.6
	Norm Group	23	43.1
	Mixed	10	41.4
9-11 Y.O. Sample		62	42.8

[a] $p < .05$ for difference from Norm Group of same sex.

The main effect of behavior problem type was significant in all five contrasts. Six of the seven clinical groups had lower social scale T scores than their normal peers. Subsequent LSD contrasts showed that four of these differences were significant ($p < .05$). 9-11 year old and 12-15 year old Externalizing boys, 12-15 year old Internalizing boys and 12-15 year old Mixed type girls were all rated as less well adapted in their social behavior than their respective Normative groups. Although 9-11 year old female and 12-15 year old male Mixed types received lower scores than their respective Norm groups, these differences were not significant. Contrary to hypothesis, 12-15 year old Internalizing girls ($M=46.4$) received the highest mean ratings on this scale, slightly higher than the Normative group of older girls ($M=45.5$) and moderately higher than the mean for the larger sample ($M=42.0$).

The main effect of sex on social scale T scores was significant for the combined young adolescent groups, excluding Externalizing boys. Girls received higher ratings than boys. The interaction of sex and behavior problem type was also significant. Internalizing young adolescent females and the female Normative group had significantly higher mean ratings than the other four groups (LSD, $p < .05$). Internalizing boys received significantly lower ratings than 4 of the 5 other groups (LSD, $p < .05$), Mixed girls being the exception. Normal boys had significantly higher ratings than Internalizing boys and Mixed type girls. Finally, Mixed type boys had significantly higher ratings than Mixed type girls. The effect of

behavior problem type for the combined young adolescent sample is significant (Normative Group > Mixed Type), but rendered meaningless because it obscures significant sex differences in all three groups.

Similarly, inspection of Tables 16 an 17 shows that the main effect of behavior problem type on social scale T scores in the contrast for 9-11 and 12-15 year old Normals vs. Externalizing boys reported in Table 15 obscures age differences in the Normative groups. Older and younger male Externalizers received similarly low ratings while the mean for the older male Norm group is significantly lower than the mean for the younger male Norm Group (LSD, $p < .05$), accounting for the significant effect of age in this contrast. In the final contrast, the significant interaction of age an behavior problem type is due to the group mean for 12-15 year old Mixed type girls which is significantly lower (LSD, $p < .05$) than means of the other three groups of girls, who are not significantly different from one another. Older Mixed type girls' low mean also accounts for the significant main effect clinical group in this contrast.

Results of multivariate analyses of selected items from the social competence scale are presented in Table 18. Group means for each item are presented in Appendix D. Inasmuch as the results of these analyses add little to the findings for social competence just presented, discussion of specific items is limited to results bearing on hypothesized differences.

TABLE 18

MANOVA Results for Selected Items from CBCL Social Scale:
Parent Report of Social Competence

12-15 Y.O. Boys/Girls: Norm/Mix/Int (N=146)

Effects	Mult F	Univariate F's # Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
Sex by Group	3.19[c]	4.72[c]	n.s.	2.70[a]	n.s.	6.14[c]
Sex	.94	3.21[a]	n.s.	n.s.	n.s.	n.s.
Group	3.03[c]	n.s.	n.s.	n.s.	n.s.	13.61[d]

12-15 Y.O. Boys: Norm/Ext/Mix/Int (N=93)

Effects	Mult F	Univariate F's # Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
Group	2.01[b]	n.s.	n.s.	2.87[b]	4.19[c]	2.73[b]

12-15 Y.O. Girls: Norm/Mix/Int (N=64)

Effects	Mult F	Univariate F's # Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
Group	3.50[d]	3.87[b]	n.s.	n.s.	n.s.	14.76[d]

[a] $p < .10$; [b] $p < .05$; [c] $p < .01$; [d] $p < .001$

TABLE 18

(Continued)

9-11/12-15 Y.O. Boys: Norm/Ext (N=86)

Effects	Mult F	Univariate F's # Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
Age by Group	.78	n.s.	n.s.	n.s.	n.s.	n.s.
Age	1.37	5.62[b]	n.s.	n.s.	n.s.	n.s.
Group	4.36[c]	8.89[c]	4.25[b]	n.s.	11.16[c]	2.91[a]

9-11/12-15 Y.O. Girls: Norm/Mix (N=85)

Effects	Mult F	Univariate F's # Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
Age by Group	2.67[b]	n.s.	n.s.	n.s.	n.s.	10.14[c]
Age	2.47[b]	n.s.	n.s.	n.s.	n.s.	5.69[b]
Group	1.99[a]	6.62[b]	n.s.	n.s.	n.s.	5.29[b]

[a]$p < .10$; [b]$p < .05$; [c]$p < .01$; [d]$p < .001$

Internalizers were expected to receive the lowest ratings for number of friends and number of contacts with friends (Acts w/ frnds) and the highest ratings for play/work by self among the clinical groups. As shown in Table 18, analyses involving Internalizers produced no significant effects for number of friends. 12-15 year old male Internalizers did receive lower ratings than Normal boys and Mixed type boys of the same age for activities with friends (LSD, $p < .05$). Contrary to hypothesis, they also received lower ratings for work/play by self than Normal boys (LSD, $p < .05$) and were not significantly different from their male peers in the other two clinical groups on this item. Young adolescent Internalizing girls, as indicated above, received high ratings for social competence. Contrary to hypothesis, their scores on individual items measuring social isolation are not significantly different from their normal female peers. Young adolescent Mixed type girls showed little similarity to the Internalizing pattern of social withdrawal predicted for this group. They received the lowest rating for work/play by self, significantly lower than any other female group, accounting for the large effect on this item for the three analyses in which they were included. They also received a significantly lower score than 12-15 year old Mixed type boys for activities with friends, but were not significantly different from their female peers on this item or on the item rating number of friends. Mixed type girls of both age groups received significantly lower ratings for participation in clubs and organizations than the combined group of their normal peers. 12-15 year old Mixed type girls significantly lower ratings on this item

compared to 12-15 year old female Normals and Internalizers accounted for the significant univariate effect on this item in the first and third analyses shown in Table 18.

Externalizing boys of both age groups received lower ratings for getting along with peers than their normal peers, and when these two clinical groups are combined and compared to the combined male Norm group, the difference is significant (LSD, $p < .05$), as predicted. Also as predicted, 9-11 year old Externalizing boys are significantly less involved in organized peer activities (Clubs & Orgs) than their Normal peers. The difference for 12-15 boys is in the same direction, but did not reach significance. Contrary to hypothesis, Externalizing boys are not more gregarious than other groups in terms of number of friends and activities with friends. The mean score for number of friends was lowest for Externalizers. In fact, scores for 12-15 year old male Externalizers are not statistically different from the scores of 12-15 year old male Internalizers on these two items. 12-15 year old Mixed type boys were generally rated as significantly different from their normal peers on only two items. As predicted and similar to Externalizing boys, they received lower ratings for getting along with peers. They also received significantly lower ratings for play/work by self than Normals. Otherwise, parent ratings of Mixed type boys' social skills were more similar to those of the Normative group than to those of Externalizers.

In summary, although Table 18 indicates significant main effects of behavior problem type in four of the five analyses and a marginally

significant main effect in the fifth, univariate effects for individual social competence items expected to differentiate among behavior problem types provided only moderate support for hypothesized differences. 12-15 year old Internalizing and Externalizing boys were more similar than expected in terms of social isolation, although Externalizers and Mixed type boys are rated as getting along more poorly with their peers. 12-15 year old Mixed type girls received ratings that did indicate some disturbance in their social adjustment but their scores did not resemble the Internalizing pattern of social withdrawal predicted for them. Individual item analysis also offered no evidence to dispute the observation from the preceding analyses of social scale T scores that 12-15 year old Internalizing girls and 9-11 year old Mixed type girls are comparable to their normal peers on the social skills measured by this scale.

Results of multivariate analyses of self-report on peer orientation variables (self-reports of time spent with friends, percentage of activities involving peer interaction without adult supervision, and time spent thinking or conversing about friends) are presented in Table 19. No significant effects of behavior problem type were obtained. Age differences were significant for time spent thinking and talking about peers, reflecting increasing peer orientation with age. Sex differences among the young adolescent subsample on peer-only activities and thoughts/conversations about friends were also significant, with girls reporting more of both than boys. These results echo previous findings in the larger study.

TABLE 19

MANOVA Results for Self Report of Peer Orientation

Contrast Groups	Effects	Multivariate F
12-15 Y.O. Boys/Girls	Sex by Group	.27
Norm/Mixed/Int	Sex	6.01**
(N=146)	Group	.63
12-15 Y.O. Boys		
Norm/Ext/Mixed/Int	Group	1.36
(N=93)		
12-15 Y.O. Girls		
Norm/Mixed/Int	Group	.23
(N=64)		
Boys 9-11/12-15 Y.O.	Age by Group	.63
Norm/Ext	Age	1.47
(N=86)	Group	1.17
Girls 9-11/12-15 Y.O.	Age by Group	1.01
Norm/Mixed	Age	3.04*
(N=85)	Group	.29

*p < .05; **p < .01

Correlations among parent report social competence variables, self report peer orientation variables, and self report measures of mood variability were generally close to zero in the larger sample (N=463). Significant low order correlations among these variables do not occur in any consistent pattern. The previous results also provided no support for any of the hypothesized relationships between mood variability and behavior problem type in the three clinical groups (N=125). The clinical group reporting the greatest average variability, young adolescent Internalizing females, was predicted to report the least. These girls also appeared to be the most socially well adapted according to parent report of social competence and self report on ESM measures in various social contexts. Other clinical groups did not differ much from one another or from their normal peers on average level of mood variability. While children in the clinical subsample who report greater variability in their moods tend to receive lower ratings of social competence (r = -.14) and contacts with friends (r = -.18) on parent reports, higher self reported mood variability is comparably associated with lower scores on all three problem behavior scales (r = -.16 [Total], -.14 [Internalizing], -.17 [Externalizing]). These relationships are very weak and contradictory. Overall, the results did not support the apriori hypothesis that variation in subjective moods would be related in a systematic way to psychopathology or social competence in this moderately disturbed subsample of children.

CHAPTER V

DISCUSSION

This study sought to identify patterns in the subjective daily emotional experiences of older children and young adolescents with moderately severe behavior problem syndromes. Analyses of experience sampling data provided little support for hypothesized differences in patterns of basic emotions, daily psychological states, and psychological states in different social contexts. The majority of significant differences and provocative trends that did emerge for young adolescent Externalizers and Internalizers contradicted the patterns of experience that had been predicted for these groups. These findings are presented in Table 20.

Internalizers

As predicted, young adolescent male Internalizers report significantly less time spent with friends, similar to their peers in the Externalizing group, as well as diminished attention in this context. However, both male and female young adolescent Internalizers report a richer, more varied pattern in their daily emotional experiences than was predicted. With the exception of evidence for apparent social withdrawal among male Internalizers, both sexes in this group are much more similar than otherwise to the young adolescent Normative groups in average moods, attention and mood variability. Internalizers of both

Table 20: Summary of Significant Findings and Trends

Profile Type	Patterns of Emotion HI SCALE(S)/Different from Norm Grp. of Same Age & Sex	Daily Psychological States	Social Context	Social Competence Parent Report	Peer Orient. Self-Rept.
Internalizers					
12-15 Y.O. Boys	**FEAR, GUILT, Shame Anger**, Sadness, Interest	n.s.	**More time alone Less time with friends** Low Attention w/frnds (n.s.)	Lower Social Scale **Less contact with friends** **Poorer Work/Play by self**	n.s.
12-15 Y.O. Girls	ANGER/SADNESS (n.s.)	**More variable Affect**	Greatest positive increase in affect/arousal, time alone v. time w/friends (n.s.)	Highest of any type	n.s.
Mixed types					
12-15 Y.O. Boys	**GUILT, SADNESS, Anger Shame**	n.s.	n.s.	**Poorer peer rels. Poorer work/play by self**	n.s.
12-15 Y.O. Girls	GUILT (n.s.), **ANGER**	**Lower Attention**	n.s.	**Lower Social Scale Poorer Work/Play by self Fewer Clubs/Orgs**	n.s.
9-11 Y.O. Girls	SHAME (n.s.)	n.s.	Not Tested	n.s.	n.s.
Externalizers					
12-15 Y.O. Boys	ANGER/GUILT (n.s.), **Less Joy**	**Lower Affect**	**More time alone Less time with with friends**	**Lower Social Scale Poorer Peer Rels.**	n.s.
9-11 Y.O. Boys	SADNESS (n.s.)	n.s.	Not Tested	**Lower Social Scale Poorer Peer Rels. Fewer Clubs/Orgs**	n.s.

Note: Significant differences from Norm Group of same age & sex are in **bold type**, findings at $p < .10$ are in normal type, noteworthy trends w/o statistical support are followed by n.s.

sexes reported higher mean experiences of anger than their normal peers. Male Internalizers were also characterized by significantly higher means on self reports of sadness, shame, and guilt than male Externalizers and normals, a pattern of emotions that came closest to the predicted pattern for any group. Young adolescent female Internalizers report subjective experiences more closely resembling the predicted Externalizing pattern with respect to anger, mood variability, and a large positive change in their emotional state during time spent with friends versus other contexts. Young adolescent female Internalizers received the highest ratings of social competence by their parents whereas young adolescent male Internalizers received the lowest rating on this measure. Parent reports of social competence seem to correspond quite well to differences between male and female Internalizers in this age group with respect to their self reported rates of peer involvement and quality of emotional experiences during these situations. This is probably the clearest sex difference that emerges from the present work and is parallel to the finding of sex differences in the study of depression in the larger sample (Larson, et. al., in press).

Mixed Types

The hypothesis that self reports of Mixed type children might shed some light on the differential diagnosis of conduct disorder and depression was not borne out by the data. Higher than average and approximately equivalent mean levels of anger characterized all four 12-15 year old behavior problem groups. Preadolescent Mixed type girls were indistin-

guishable from their normal peers on most measures. Young adolescent Mixed type boys were more similar to Internalizers than Externalizers, contradicting what had been predicted. Young adolescent Mixed type girls were distinguished from young adolescent Internalizing girls by lower levels of cognitive investment and poorer ratings of social competence by parent report. The expected sex differences in the Mixed group were not supported by the data. Young adolescent male Mixed types looked more like Internalizers than Externalizers in their patterns of emotion. The few characteristics that distinguish 12-15 year old female Mixed types at all (high anger, fewer organized peer activities) were more indicative of patterns hypothesized for Externalizers. No conclusions about the conceptual integrity of this behavior problem type as a nosological entity can be drawn from these findings.

Externalizers

Young adolescent male Externalizers reported the lowest average experience of joy in the entire sample, reflecting the prediction of diminished joy for this group. Young adolescent Externalizers also stand out in reporting lower affective states than any of the eleven groups studied. In contrast to the pattern of relatively higher arousal, variability of moods, and gregariousness that was expected for them, young adolescent male Externalizers reported a constricted range of emotional experience and less time spent with friends compared to most other groups. Young adolescent male Externalizers are similar to their normal peers in their patterns of emotional experience and profiles for both groups are below

the mean level for the sample as a whole. While 12-15 year old male Externalizers reported anger as their highest mean on the seven emotion scales, neither young adolescent or preadolescent Externalizing boys reported significantly more anger than their disturbed or normal peers as had been predicted. Young adolescent and preadolescent male Externalizers receive similarly poor ratings of social competence by parent report consistent with previous findings for this measure. Otherwise, 9-11 and 12-15 year old male Externalizers do not appear to share many similarities in their subjective daily experience. There was a nonsignificant trend for preadolescent Externalizers to indicate higher levels of arousal and more sadness than any of the other groups of boys, but no other indications of disturbance in their self-reports of subjective experience were observed.

Implications of Findings and Suggestions for Future Research

The pattern of emotions observed for 12-15 year old male Externalizers may be considered noteworthy for its overall configuration in spite of its lack of statistical difference from the pattern for the 12-15 year old Normative group. Young adolescent Externalizers reported anger as their most dominant emotional experience in the context of a much more diminished experience of other emotions, especially joy, compared to other groups. This pattern, as well as Externalizers' lower average affect, suggests the possibility that young adolescent Externalizers may experience a qualitatively different emotional baseline than their peers. Savitsky and Eby (1979) reviewed research evidence for a relationship between awareness of emotion and antisocial behavior. Their review indicates that "affective

poverty" or an inability to experience emotion states is more frequent among boys classified as "psychopathic delinquents" (undersocialized conduct disorders in DSM terminology). This lack of emotion awareness is hypothesized to be related to distortions of emotional cues in interpersonal situations that lead these boys to act aggressively at the slightest provocation. To the extent that these boys are likely to be growing up in dysfunctional families characterized by high levels of coercive, explosive discipline (Patterson, 1982), their emotional constriction could be interpreted as a logical adaptation to a situation which they have construed as dangerous or chronically volatile and over which they have little control.

This interaction of subjective and interpersonal experience could account for Externalizers' self-report of social isolation and their parents' reports of poorer peer relations for this group. While no firm conclusions along these lines can be drawn for Externalizers in the present sample, their self-reports of subjective emotional experience do seem to fit with the phenomenology of delinquency described by Savitsky and Eby. Their review calls for more careful research designs to test this relationship between emotion awareness and antisocial behavior as the studies they reviewed were characterized by methodological limitations similar to those of the present one, especially with regard to the clinical seriousness or intensity of the criteria used to characterize antisocial behavior. As noted in the description of sample attrition in this study, there is some evidence that the high demand characteristics of the Experience

Sampling Method tend to screen out the most maladapted youngsters. The group of Externalizing boys included in the final sample for this study certainly can not be described as in the high range of clinical disturbance so it should not be surprising that the effects obtained are suggestive at best.

Contrary to previous findings describing the superior social adjustment of Internalizers compared to Externalizers, male Internalizers in the present study appeared to be as disturbed in their social adjustment as male Externalizers. However, measures of male Internalizers' subjective states are more consistent with previous work contrasting these two types. Self reports by Internalizers of both sexes indicate a richer and more well developed range of emotions than the older male Externalizing group. This observation suggests some support for Achenbach's hypothesis concerning a quality of cognitive/affective experience among Internalizers more conducive to therapeutic change and reflecting better internalization of social mores (McConaughy, Achenbach, & Gent, 1988). It also provides some support for the position taken by differential emotions theory. This theory posits that different diagnostic categories should be characterized by distinctive patterns of basic emotions which contribute to observable differences in behavior and symptomology. In the context of the preceding discussion, Internalizers might be said to have a capacity for emotion awareness that is hypertrophied compared to Externalizers. They certainly seem to be much more aware of both painful and positive affect. Inasmuch as Internalizers report significantly more joy as well as more anger,

sadness, and fear than Externalizers, they may be more amenable to the affective demands of psychotherapy contributing to the observation that therapeutic interventions are typically more successful with these children than is generally true with Externalizers. That is, with a wider range of both positive and negative emotions available to them, they may have a greater capacity to engage in the interpersonal process of child therapy in a way that is rewarding to the therapist and ultimately more productive for the child.

While increased emotion awareness may have positive prognostic value for Internalizers, it may also lead to the sex differences observed between young adolescent boys and girls in this group which parallel the findings of the study of depression in the larger sample. Internalizing girls appear to seek relief from negative affect in the company of their friends, a potentially adaptive solution. In contrast, as suggested by Larson et. al. based on their findings for depressed boys, Internalizing boys in the present study report significantly less than normative levels of peer interaction, perhaps as a result of being scapegoated for their emotionality and/or avoiding social intercourse because it stimulates too much emotional dissonance for them. These sex differences in sociability between Internalizing boys and girls are suggestive of the common clinical observation that women tend to be more adept at using interpersonal relationships for support (including psychotherapy) while men have a more difficult time in this domain. Internalizing boys who are not well adapted

in their social lives may then be at risk for using alcohol and drugs as a means of coping with painful affects and feelings of loneliness or rejection stemming from their social isolation.

The recent work of Achenbach and his colleagues (1988) suggests that there is more heterogeneity in the functioning of children broadly identified as Internalizers than is true of children identified as Externalizers. While sex and age differences are not addressed in their design, McConaughy, et. al. found evidence for nonlinear differences among 4 different subtypes of Internalizing syndromes in a large sample of clinically referred 6-11 year old boys. Only 2 subtypes of Externalizers have been reliably identified in this work and the differences between them were fewer than the similarities. Given these findings, it is possible that the Mixed type children grouped together by the broad-band distinction in the present sample might be classified quite differently using the more discriminating cluster analysis approach which Achenbach's group is developing. It seems important that future research using the CBCL to classify children into clinically relevant groups should strive to sample sufficiently large numbers of children and/or restrict the number of groups to be studied so that children can be more finely classified by the entire pattern of their behavior problems rather than relying solely on differences between the two summary scales of internalizing and externalizing problems.

These considerations parallel other fundamental limitations of the present work. First, Achenbach was quite clear in a personal communication that one should not expect to find many significant between groups dif-

ferences using the CBCL to classify children from a non-referred sample. Although the screening procedure used here identified a moderately sized subsample of disturbed children who were significantly different from a matched subsample of their peers on the Total problems scale, the overall rate of pathology was somewhat lower than in studies which have shown clearer differences in other aspects of functioning between disturbed and normal youngsters. Secondly, the subsample of children classified as disturbed was skewed toward older working class boys, which was anticipated in the original design but not to the extent observed. The result was a significant restriction in statistical power and cell sizes for contrasts involving other age/sex groups. To the degree that the larger sample was random, the demographics of the 27% of children who were identified with moderately severe behavior problems are interesting in their own right, but these demographics also limited planned age, sex and clinical group comparisons. Attempts to conduct research on clinically relevant questions with non-referred children, even in relatively large samples, need to take these population trends into account. The present study, while offering some provocative evidence for differential patterns of subjective and interpersonal psychological functioning among young adolescents, especially boys, could not really address many of the questions it had been designed to explore nor provide more definitive observations on the issues it did examine because of the limitations imposed by the demographics of the clinical sample.

A final methodological consideration is raised by evidence from this and other analyses of ESM data from the larger sample showing less variance and higher means in the average subjective states of preadolescent children. It is not entirely clear whether this finding represents real differences in the typical emotional experiences of preadolescents and young adolescents or whether it suggests that preadolescent children simply cannot yet articulate their emotional experience to the same degree as young adolescents. More research will be necessary to resolve this issue. In the meantime, studies designed to test hypotheses related to age differences in emotional experiences within and between disturbed groups of children need to pay attention to the likely confound of age and complexity of subjective emotional experience.

There are alternative explanations of the finding of fewer than expected differences between clinical groups of children and their normal peers beyond design problems. The apriori predictions in this study for effects of behavior problem type were extrapolated from differential emotions theory, which has primarily been tested with adult samples, and the sparse literature on the subjective experience of disturbed children. Analysis of ESM variables did not identify strong relationships between subjective states and behavioral syndromes in this sample of children as clearly as has been the case for psychiatrically diagnosed adults. Perhaps this result should be seen as significant in its own right. The paucity of significant differences between clinical groups in this study could be interpreted as indicative of the discontinuities in child and adult psy-

chosocial disorders suggested by recent work in developmental psychopathology. That is, children identified by their parents as having behavior and/or adjustment problems are still in the process of developing the personality characteristics that may or may not qualify them later on as psychiatrically disturbed. Clinicians working with behavior disordered children and their families are increasingly likely to identify and attempt interventions into family processes assumed to provoke and maintain disturbed behavior in children (Patterson, 1982). Combinations of individual child factors (such as temperament and activity level) and family environment (such as coercive family processes) may certainly put a child at risk for developing a more fixed pathological style of personality and behavior later on in their lives. However, the relative lack of evidence in the present study for clear patterns of subjective maladaptation that might distinguish different types of moderately disturbed children and young adolescents suggests that the search for childhood equivalents of adult psychiatric syndromes may not find disorders that are as pervasively disruptive of individual adaptation in children to the same extent that diagnosable mental illness can be for adults.

It is also possible that the similarity of Internalizers, Mixed types, and Externalizers on measures of daily psychological states, social competence, and peer orientation reflects a fundamental weakness in the clinical utility of the Internalizing/Externalizing dichotomy. While such a dichotomy has proven useful in explorations of temperament in childhood, no such gross level of categorization has survived recent improvements in

the clinical assessment of adults. Summary measures of psychopathology do not reflect the complexity or variety of individual psychopathology as encountered in clinical practice. As mentioned above, the recent work of Achenbach and his colleagues using multiaxial clinical assessment (teacher report, direct observation, child report) has revealed four distinct subtypes under the Internalizing rubric and two distinct types of Externalizers. It is likely that these finer distinctions will tell us more about the varieties of strengths and weaknesses of children identified by their parents as behavior disordered than will classification based on total scale scores. It is time for research efforts in childhood psychopathology to move on from the well established correlates of the Internalizing/Externalizing dichotomy into explorations of subclasses of children who can be distinguished by the configuration of their entire behavior problem profile, as Achenbach and colleagues have shown. This finer level of analysis and classification puts more demands on the design and implementation of child clinical research, but these demands must be met if we hope to expand our understanding of maladaptation in childhood rather than rest on the established knowledge we have already accumulated.

In retrospect, the hypotheses formulated for this investigation seem to have taken the labels applied to parent reports of behavioral syndromes too literally. Externalizers were generally expected to report "extroverted" subjective symptoms while Internalizers were expected to be characterized by more "introverted" types of problems. The results contradicting these intuitively appealing distinctions suggest that future

investigations of the subjective experience of children labeled as disturbed should pursue questions of the emotional correlates of overt behavior problems without the apriori assumption that these two levels of functioning (behavioral and subjective) should correspond for children in the same way as psychiatric syndromes in adults. The present study concludes with the observation that parent reports of behavior disorder and self reports of emotional disturbance were much more independent in this sample of children than was expected.

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APPENDIX A

CHILD BEHAVIOR CHECKLIST

CHILD BEHAVIOR CHECKLIST

In this questionnaire, we'd like you to describe your child, as compared to what you know of other children who are the same age. Please answer each question as completely as you can.

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc

☐ None

Compared to other children of the same age, about how much time does he/she spend in each?

Compared to other children of the same age, how well does he/she do each one?

	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, singing, etc (Do not include T.V.)

☐ None

Compared to other children of the same age, about how much time does he/she spend in each?

Compared to other children of the same age, how well does he/she do each one?

	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups your child belongs to.

☐ None

Compared to other children of the same age, how active is he/she in each?

	Don't Know	Less Active	Average	More Active
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, etc

☐ None

Compared to other children of the same age, how well does he/she carry them out?

	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

---

1. About how many close friends does your child have? ☐ none ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week does your child do things with them? ☐ less than 1 ☐ 1 or 2 ☐ 3 or more

---

VI. Compared to other children of his/her age, how well does your child:

		Worse	About the same	Better
a	Get along with his/her brothers & sisters?	☐	☐	☐
b	Get along with other children?	☐	☐	☐
c	Behave with his/her parents?	☐	☐	☐
d	Play and work by himself/herself?	☐	☐	☐

VII. 1. Current school performance—for children aged 6 and older:

☐ Does not go to school

		Failing	Below average	Average	Above average
a.	Reading or English	☐	☐	☐	☐
b.	Writing	☐	☐	☐	☐
c.	Arithmetic or Math	☐	☐	☐	☐
d.	Spelling	☐	☐	☐	☐
Other academic subjects—for example: history, science, foreign language, geography. e.	_____	☐	☐	☐	☐
f.	_____	☐	☐	☐	☐
g.	_____	☐	☐	☐	☐

---

2. Is your child in a special class?

☐ No ☐ Yes—what kind?

---

3. Has your child ever repeated a grade?

☐ No ☐ Yes—grade and reason

---

4. Has your child had any academic or other problems in school?

☐ No ☐ Yes—please describe

When did these problems start?

Have these problems ended?

☐ No ☐ Yes—when?

Below is a list of items that describe children. For each item that describes your child now or within the past 3 months, please circle the '2' if the item is very true or often true of you child. Circle the '1' if the item is somewhat or sometimes true of your child. If the item is not true of your child, circle the '0'.

1 2 1. Acts too young for his/her age
1 2 2. Allergy (describe). _____
_____
1 2 3. Argues a lot
1 2 4. Asthma
1 2 5. Behaves like opposite sex
1 2 6. Bowel movements outside toilet
1 2 7. Bragging, boasting
1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Cruel to animals
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Day-dreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys things belonging to his/her family or other children
0 1 2 22. Disobedient at home
0 1 2 23. Disobedient at school
0 1 2 24. Doesn't eat well
0 1 2 25. Doesn't get along with other children
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Eats or drinks things that are not food (describe): _____
_____
0 1 2 29. Fears certain animals, situations, or places, other than school (describe): _____
_____
0 1 2 30. Fears going to school

0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with children who get in trouble
0 1 2 40. Hears things that aren't there (describe):
_____
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Likes to be alone
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, highstrung, or tense
0 1 2 46. Nervous movements or twitching (describe):
_____
_____
0 1 2 47. Nightmares
0 1 2 48. Not liked by other children
0 1 2 49. Constipated, doesn't move bowels
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy
0 1 2 52. Feels too guilty
0 1 2 53. Overeating
0 1 2 54. Overtired
0 1 2 55. Overweight
56. Physical problems without known medical cause:
0 1 2 a. Aches or pains
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (describe):
_____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

1 2 57. Physically attacks people
1 2 58. Picks nose, skin, or other parts of body (describe): _____

80

1 2 59. Plays with own sex parts in public 16
1 2 60. Plays with own sex parts too much

1 2 61. Poor school work
1 2 62. Poorly coordinated or clumsy

1 2 63. Prefers playing with older children 20
1 2 64. Prefers playing with younger children

1 2 65. Refuses to talk
1 2 66. Repeats certain acts over and over; compulsions (describe): _____

1 2 67. Runs away from home
1 2 68. Screams a lot 25

1 2 69. Secretive, keeps things to self
1 2 70. Sees things that aren't there (describe):

1 2 71. Self-conscious or easily embarrassed
1 2 72. Sets fires

1 2 73. Sexual problems (describe):

30

) 1 2 74. Showing off or clowning

) 1 2 75. Shy or timid
) 1 2 76. Sleeps less than most children

) 1 2 77. Sleeps more than most children during day and/or night (describe): _____

0 1 2 78. Smears or plays with bowel movements 35

0 1 2 79. Speech problem (describe): _____

0 1 2 80. Stares blankly

0 1 2 81. Steals at home
0 1 2 82. Steals outside the home

0 1 2 83. Stores up things he/she doesn't need (describe):

40

0 1 2 84. Strange behavior (describe): _____

0 1 2 85. Strange ideas (describe):

0 1 2 86. Stubborn, sullen, or irritable

0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot 45

0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language

0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe):

0 1 2 93. Talks too much 50
0 1 2 94. Teases a lot

0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much

0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking 55

0 1 2 99. Too concerned with neatness or cleanliness
0 1 2 100. Trouble sleeping (describe):

0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks energy

0 1 2 103. Unhappy, sad, or depressed 60
0 1 2 104. Unusually loud

0 1 2 105. Uses alcohol or drugs (describe):

0 1 2 106. Vandalism

0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed 65

0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex

0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worrying

113. Please write in any problems your child has that were not listed above:

0 1 2 _____
0 1 2 _____
0 1 2 _____

APPENDIX B

SAMPLE BEEPER QUESTIONNAIRE

SMALL BEEPER QUESTIONNAIRE

DAY:_____ TIME SIGNALLED:_____AM/PM TIME FILLED OUT:_____

JUST BEFORE YOU WERE SIGNALLED:

WHAT WERE YOU THINKING ABOUT?_____

_____

WHERE WERE YOU?_____

_____

WHAT WERE YOU DOING?_____

_____

NAME OF TV SHOW, BOOK, RECORD OR TAPE, TOPIC OF CONVERSATION:

_____

	NOT AT ALL			SOME WHAT			QUITE			VERY
HOW MUCH CHOICE DID YOU HAVE ABOUT DOING THIS ACTIVITY?	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
DO YOU WISH YOU HAD BEEN DOING SOMETHING ELSE?	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
HOW WELL WERE YOU PAYING ATTENTION?	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
WAS IT HARD TO PAY ATTENTION?	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
	0	1	2	3	4	5	6	7	8	9

HOW WERE YOU FEELING BEFORE YOU WERE SIGNALLED?

	VERY MUCH	KIND OF	A LITTLE BIT	NOT AT ALL
PROUD	+++	++	+	.
INTERESTED	+++	++	+	.
SELF-CONSCIOUS	+++	++	+	.
BORED	+++	++	+	.
KINDLY	+++	++	+	.
JEALOUS	+++	++	+	.
WORRIED	+++	++	+	.
HAPPY	+++	++	+	.
IGNORED	+++	++	+	.
HARDWORKING	+++	++	+	.
ACCEPTED	+++	++	+	.
CALM	+++	++	+	.

OVERALL, HOW WERE YOU FEELING?

	VERY	QUITE	SOME	NEITHER	SOME	QUITE	VERY	
DROWSY	O	o	.	-	.	o	O	ALERT
HAPPY	O	o	.	-	.	o	O	UNHAPPY
IRRITABLE (grouchy)	O	o	.	-	.	o	O	CHEERFUL
FRIENDLY	O	o	.	-	.	o	O	ANGRY
EXCITED	O	o	.	-	.	o	O	BORED

WHO WERE YOU WITH (OR TALKING TO ON THE PHONE)? (Check all that apply)

ALONE, OTHER PEOPLE NEARBY... < > IN CLASS.....< >

ALONE, NO ONE AROUND..... < > ONE FRIEND - A BOY.....< >

MOTHER..... < > ONE FRIEND - A GIRL.....< >

FATHER..... < > SEVERAL FRIENDS - BOYS.....< >

SISTERS_____ SEVERAL FRIENDS - GIRLS.....< >

BROTHERS_____ SEVERAL FRIENDS - BOYS & GIRLS.....< >

OTHER RELATIVES_____ OTHERS_____

WOULD YOU RATHER HAVE BEEN : ALONE..... < > WITH PEOPLE.....< >

IF YOU WERE WITH PEOPLE, WERE THEY:

	VERY	QUITE	SOME	NEITHER	SOME	QUITE	VERY	
FRIENDLY	O	o	.	-	.	o	O	UNFRIENDLY
SERIOUS	O	o	.	-	.	o	O	JOKING

WAS SOMEBODY BEING THE LEADER? 1) YES 2) NO

WAS IT YOU? 1) YES 2) NO, WHO WAS IT?_____

LOOK BACK ON THE FIRST PAGE.

IF YOU WERE FEELING A LOT OF SOMETHING, WHAT WERE YOU FEELING STRONGLY ABOUT?

(For example, what did you feel "proud" about? or "sorry" about?)

_____

_____

APPENDIX C

GROUP MEANS FOR ESM VARIABLES BY SOCIAL CONTEXT:

12-15 YEAR OLDS

TABLE C1

Group Means for Average Affect in Different Social Contexts: 12-15 Year Olds

Sex	Profile Type	N	Alone	Family	Class	Friends
Boys		58	4.75	4.84	5.01	5.20
	Norm Group	35	4.69	4.80	4.96	5.13
	Mixed	12	4.86	4.78	5.13	5.33
	Internalizers	11	4.81	5.05	5.03	5.28
Girls		49	4.84	4.94	5.24	5.50
	Norm Group	27	5.05	5.04	5.25	5.54
	Mixed	13	4.70	4.78	5.13	5.22
	Internalizers	9	4.38	4.87	5.39	5.78
Total Sample		107	4.79	4.89	5.12	5.34

Note: Scale Range = 1 [low] to 7 [high].

TABLE C2

Group Means for Average Arousal in Different Social Contexts:
12-15 Year Olds

Sex	Profile Type	N	Alone	Family	Class	Friends
Boys		58	4.21	4.56	4.59	4.93
	Norm Group	35	4.27	4.59	4.54	4.95
	Mixed	12	3.72	4.05	4.38	4.62
	Internalizers	11	4.55	5.03	5.01	5.21
Girls		49	4.07	4.15	4.46	4.76
	Norm Group	27	4.17	4.26	4.55	4.81
	Mixed	13	4.19	4.27	4.18	4.46
	Internalizers	9	3.58	4.15	4.58	5.03
Total Sample		107	4.14	4.42	4.53	4.85

Note: Scale Range = 1 [low] to 7 [high].

TABLE C3

Group Means for Average Attention in Different Social Contexts: 12-15 Year Olds

Sex	Profile Type	N	Alone	Family	Class	Friends
Boys		58	6.67	7.27	6.58	7.23
	Norm Group	33	6.57	6.93	6.31	7.30
	Mixed	14	6.50	7.58	6.53	7.74
	Internalizers	11	7.21	7.90	7.45	6.35
Girls		48	6.38	6.58	6.15	6.94
	Norm Group	27	6.61	6.71	6.27	7.03
	Mixed	12	5.68	5.92	5.41	6.49
	Internalizers	9	6.62	7.07	6.76	7.25
Total Sample		106	6.54	6.96	6.38	7.09

Note: Scale Range = 1 [low] to 10 [high].

TABLE C4

Group Means for Average Perceived Friendliness
in Different Social Contexts:
12-15 Year Olds

Sex	Profile Type	N	Family	Class	Friends
Boys		60	5.82	5.79	6.13
	Norm Group	34	5.69	5.72	6.08
	Mixed	15	6.19	5.83	6.23
	Internalizers	11	5.69	5.98	6.16
Girls		49	5.64	5.93	6.42
	Norm Group	27	5.80	5.91	6.53
	Mixed	13	5.32	5.94	6.13
	Internalizers	9	5.62	5.99	6.51
Total Sample		109	5.74	5.85	6.26

Note: Scale Range = 1 [very unfriendly] to 7 [very friendly].

APPENDIX D

MEANS FOR SELECTED ITEMS FROM CHILD BEHAVIOR CHECKLIST

SOCIAL SCALE

TABLE D1

Group Means for Selected Items from CBCL Social Scale:
Parent Report of Social Competence

Age/Sex/Group	N	# Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
12-15 Yr. Olds	157	.36	.39	1.41	1.31	1.36
Boys	93	.28	.37	1.46	1.28	1.32
Norm Group	46	.33	.46	1.52	1.43	1.48
Externalizers	11	.09	.18	1.27	.91[a]	1.18
Mixed	23	.39	.30	1.65	1.13[a]	1.17[a]
Internalizers	13	.08	.31	1.08[a]	1.31	1.15
Girls	64	.47	.42	1.33	1.36	1.41
Norm Group	34	.56	.47	1.35	1.41	1.59
Mixed	18	.11[a]	.33	1.22	1.33	.83[a]
Internalizers	12	.75	.42	1.42	1.25	1.75

Note: Table displays individual item means for 3-point scale where 0 is low and 2 is high.

[a] $p < .05$ for difference from Norm group of same age & sex.

TABLE D1

(Continued)

Age/Sex/Group	N	# Club & Orgs	# of Frnds	Acts. w/ Frnds	Peer Rels.	Wrk/Ply by Self
9-11 Yr. Olds	62	.60	.50	1.21	1.27	1.39
Boys	29	.76	.45	1.41	1.34	1.24
Norm Group	20	1.00	.55	1.45	1.45	1.30
Externalizers	9	.22[a]	.22	1.33	1.11	1.11
Girls	33	.45	.55	1.03	1.21	1.52
Norm Group	23	.57	.52	1.00	1.22	1.48
Mixed	10	.20	.60	1.10	1.20	1.60
Total Sample	219	.42	.42	1.35	1.30	1.37

Note: Table displays individual item means for 3-point scale where 0 is low and 2 is high.

[a] $p < .05$ for difference from Norm group of same age & sex.

APPROVAL SHEET

The dissertation submitted by Michael T. Klinger has been read and approved by the following committee:

Dan P. McAdams, Ph.D., Director
Professor of Psychology
Loyola University of Chicago

Joseph A. Durlak, Ph.D.
Professor of Psychology
Loyola University of Chicago

Maryse Richards, Ph.D.
Professor of Psychology
Loyola University of Chicago

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/19/90
Date

Dan P. McAdams
Director's Signature