

PSYCHOSOCIAL CHARACTERISTICS  
OF  
ADOLESCENTS AT RISK  
FOR VIOLENCE

By

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The current literature on adolescents suggest that a multitude of psychological and social factors, including personality, environment and familial, can interact to place these adolescents at risk for aggression and violence. It was hoped that this study could provide a heterogeneous representation of adolescents for violence in terms of psychosocial factors. The subjects in this study were 119 male adolescents who attended schools targeted for children with behavioral difficulties. These adolescents were given four self-report measures which examined personality, affective and familial variables. A hierarchical, agglomerative cluster analysis was conducted to see if adolescents at risk

for aggression presented a heterogeneous picture in terms of personality characteristics. Results of the cluster analysis suggested three clusters of adolescents at risk. Examination of the three cluster types by anger expression, family control, trait anxiety and trait anger found distinctions between groups for anger expression, trait anger and trait anxiety. This suggests a possible relationship between personality presentation and affective responding. Further analyses suggested a link between anger control and the least elevated personality type. A series of linear regression equations found relationships between high levels of angry acting-out and the family variables of cohesion and conflict.

## CHAPTER 1 INTRODUCTION

Adolescents at risk is a term used to describe sub-populations of adolescents who are disadvantaged economically and/ or socially. As a result, these adolescents are at risk for a number of developmental problems including: juvenile delinquency, teenage pregnancy, sexually transmitted diseases (STDs), substance abuse, and illiteracy. Current definitions of adolescents at risk are usually fairly broad. Simply stated, adolescents at risk are those juveniles who are at risk for poor developmental outcome. Additionally, risk behavior can encompass a wide number of problems including illicit substance experimentation/ substance abuse, sexual promiscuity, and excessive violence. Risk behavior can have both short- and long- term consequences. The factors that may predispose a youth to these behaviors are complex and inter-related (Dryfoos, 1990; Ginzberg et al., 1988; Jessor and Jessor, 1977). Social factors may include parents, peers, societal attitudes and media influences (Hawkins and Weiss, 1985; Dryfoos, 1990). Psychological influences include personality, affect, and individual attitudes and beliefs (Quay, 1987; Dryfoos, 1990). Biological factors may include psychiatric, neurological and non-neurological medical factors. Finally, economic factors include unemployment and living in an

economically impoverished area and/ or a high crime area (Baldus and Tribe, 1978; Siegel, 1981). These at risk adolescents are likely to continue their inappropriate behavior into adulthood and place additional burdens upon society. It is difficult for a social science to separate the above mentioned factors, determine which have the greatest impact on a developing youth, and produce sufficient programs or interventions to sufficiently impact these youth. Many theories have been generated to explain the high prevalence of at risk adolescents in our society. Additionally, many intervention programs have been developed over the years to impact these behaviors. However, there exists a need for a larger empirical base about these behaviors, the factors influencing them and what precipitates at risk behaviors in order to properly serve this population (Dryfoos, 1990).

The present study was proposed in order to examine factors that may predispose adolescents towards violent behavior, particularly expressive violence. Expressive violence is violence that is predicated interpersonally between individuals or groups. The youths who are prone to expressive violence include juvenile delinquents, individuals who have extensive histories of violence in settings such as school or the community, but have not been officially arrested, and those who live in high crime/ economically impoverished areas. This study explores those factors that may predispose youth to violence within the psychosocial domain: personality, affect, and familial elements. This study utilized a more

heterogeneous representation of adolescents at risk in such a way as to provide for more accurate assessment and possibly better intervention measures for these adolescents.

### Project Purpose

The purpose of this study was to examine psychosociological factors that may predispose male adolescents to violence. These factors include personality, affect, and familial elements. By studying a more heterogeneous group of adolescents at risk, this study was designed to provide support for those factors in predicting violence in youths at risk. If personality structure, affective symptoms and family cohesion do predict increased risk, it may provide an empirical basis for more effective intervention strategies. This study examined only male adolescents due the relatively low frequency of female adolescents who are referred to agencies such as alternative schools or detention centers compared to males. However, future research may suggest a gender comparison on a number of different psychosocial variables, including personality, affect and family, for adolescents at risk for aggression.

### Theoretical Rationale

Historically, psychological theories concerning adolescents at risk were uni-modal in that these adolescents were viewed as a homogeneous group with the same behavioral presentation (Vedder, 1954; McCann, 1957).

Traditionally, they were viewed as sociopathic with many of the traits associated with adult sociopaths. Subsequent adolescent personality theory, such as the adolescent personality theory by Hathaway and Monachesi (1963), have suggested differential personality characteristics. However, even today many institutions and individuals still use a uni-modal system to intervene with adolescents at risk. A common example is the modern-day school system. Children and adolescents with disruptive behaviors are commonly classified as "emotionally handicapped (EH)," even though they have significantly distinct behavioral presentations, personality factors and familial components.

This study proposed that adolescents at risk are a heterogeneous group in terms of personality structure. This personality structure is important because it affects how a child views and interacts with the outside world. This interaction with the outside world can be expressed through emotional symptomatology which can be reflected in a child striking out against the world externally through anger, or conducting harmful, self-injurious behaviors internally through anxiety. Both of these behaviors are completely distinct behavioral presentations, but under a traditional uni-modal system they can simply be labeled as inappropriate behavioral presentations. This is hypothesized to impair intervention because no one specific form of symptomatology is targeted. It is further hypothesized that there are sub-groups of adolescents at risk which have

significant anger and anxiety components occurring simultaneously. In addition, it is proposed that the personality and behavioral presentations of adolescents at risk are further affected by familial factors, particularly those related to issues of attachment and warmth. It is believed that an inverse relationship exists between low levels of family cohesion and high levels of affective symptomatology and highly unstable personality functioning.

### The Occurrence of Delinquency

One sub-population of adolescents at risk for violence includes juvenile delinquents. Juvenile delinquency is defined by a finding of violation of legal statutes relating to criminal codes, school (truancy) and other behaviors (eg. runaway, sexual promiscuity, etc.). In many ways, juvenile delinquency is less complicated to define because it is shaped by legal statutes and official facts and figures compiled from a variety of different agencies. One such agency is the United States Children's Bureau.

Since 1927, the U.S. Children's Bureau has circulated estimates on the number of juvenile offenses committed within the United States. Reports out of the Children's Bureau have indicated the number of crimes committed by juveniles has shown a substantial increase every year since the Bureau began tabulating juvenile offenses (Roberts, 1987, pg. 9).

The U.S. Children's Bureau in the 1930s estimated 200,000 juvenile offenders in the United States. In 1950, the Bureau estimated the number to

be 435,000 juveniles, and by 1966 the estimate ballooned to over 1,000,000 delinquents arrested in the United States. During the last two decades, the Federal Office of Youth Development has reported a significant increase in the number of juvenile offenders. By 1984, the number of arrests for adolescents less than the age of 18 had exceeded 2,000,000 (actual figure: 2,062,448). Consequently, this growth has significantly exceeded the growth of the population of children in the 10- to 17-year-old age group. According to the 1984 data, the delinquent most likely to be arrested was between the ages of 15 and 18 and the most common offense was larceny/theft (Roberts, 1987, pg. 10). Roberts (1987) indicated that the majority of the crimes by juveniles were property-related, although there was a trend towards violent crimes as the youths became older.

In terms of ethnicity, African-American males are more likely to be arrested than any other group. Hindelang (1981) analyzed information that was collected in the American National Crime Survey. He compiled the data from crimes against persons including rape, robbery, assault, and theft to compute the offense rates for different population subgroups. The estimates indicated that for juveniles aged 12-17, 2.1% of these offenses were committed by white females, 8.6% by African-American females, 8.0% by white males, and 43.2% by African-American males. There are various theories which have been proposed to rationalize the differences in delinquency rates for African-Americans and whites. The majority of these

theories suggest that ethnicity is not an important causal factor (Quay, 1987) but that, instead, African-Americans and whites differ on a number of precursors to delinquency. These precursors may include low family income and poor parental child-rearing practices. It has been argued that because of the high proportion of black single-parent households, there is less parental control and supervision in African-American families (Quay, 1987).

For African-American males, black-on-black homicide is the leading cause of death for males between the ages of 15-34. The chances that an African-American male will be murdered is roughly ten times that of whites males. African-American females are five times as likely to be murdered as white females (Quay, 1987).

These statistics may only represent the "tip of the iceberg" in terms of actual reporting. Not all delinquent behavior is detected and the acts which are officially recorded do not represent a random sample of juvenile acts. Official statistics only provide a limited index of juvenile delinquents. However, they may be useful in indicating trends or suggesting trends for research and/ or intervention.

#### Public Health Responses to Adolescents At Risk For Violence

The conflicts of violent youth have received substantial attention from the public via mass media. In response to public opinion that interventions are needed for violence within our youth, the federal

government has responded with a number of programs targeting the youth. An example of government intervention includes a response by the Centers for Disease Control.

In 1991, the Centers for Disease Control (CDC) defined violence among adolescents as a public health dilemma. This agency worked on establishing guidelines to help prevent the occurrence and the overall rate of violence among teenagers, especially those of a minority population, ie. African-Americans, Hispanics, and Native Americans. The CDC (1991) defined several underlying assumptions about violence among youth in an effort to help combat the problem. One of these assumptions was that violence is a learned behavior that can be changed and prevented. Another assumption by the CDC was that there is no simple or single solution to the problem of youth violence. In the third assumption, the CDC indicated that a framework for violence intervention exists. Within this framework, a community-based program must have the following characteristics: 1) there must be coordinated responses for many community organizations and groups; 2) activities and interventions should be targeted at specific risk groups; 3) community groups should provide societal support for individual behavioral change via advocacy and policy development, and 4) it is necessary to apply multiple methods in multiple settings (CDC, 1991).

The fourth assumption of the CDC centered around the idea that each active participant in the intervention process be made held accountable for

whom and to whom activities are being directed. The CDC noted that citizens should be given their own authorization to identify and choose their priorities, activities, and retain control over what happens in their communities, a process known as "empowerment." Empowerment is needed in many of these communities due to the fact that the sense of powerlessness and lack of control contributes to violence. Clear, conscientious efforts should be attempted to return community control back to these communities. Community participation, responsibility and revitalization were viewed as important ingredients to empowerment (CDC, 1991).

The final assumption of the CDC was that meaningful change in a complex, multisystemic problem takes a lengthy period of time. The final measures of success in a program, such as decreases in mortality, injury, and disability, will not be immediate, and an enduring commitment to provide resources is critical to achieving these ends (CDC, 1991).

The CDC looked at targeting violence prevention strategies to populations of adolescents at high-risk for violence. The factors that they examined as contributing to the high rate of interpersonal violence among adolescents at risk included unemployment, poverty, low educational opportunities and achievement, drug/ alcohol abuse, and weapon carrying (CDC, 1991).

The CDC (1991) identified five groups of high-risk teenagers considered to be at highest priority. The first of these groups were those

that live in a geographically defined area in which rates of violent deaths, injury and disability are extremely high. Children growing up in these areas may be exposed to high rates of violence through such activities as drug dealing and/ or gang activity. Children growing up in these areas may be likely to model their self-defense and conflict-resolution skills on those violent behaviors that they are exposed to on a routine basis.

The second of these groups were those youths who have been targeted as belonging to a gang or youths that have been targeted as at risk for becoming gang members. Studies have shown that the rate of violent offenses for gang members is three times that of adolescents who are not gang members (CDC, 1991). It may be difficult to distinguish those youths who belong to a gang from those who do not. Gang membership may span several generations within a family or extended family. Children and adolescents may seek the companionship, monetary rewards, and sense of belongingness that may be associated with being in a gang (CDC, 1991).

The third group included those youths who are members of families that have problems related to violence. The factors associated with this include unsupervised children, parental drug abuse, child abuse, and the neglect or absence of a parental role model. Studies (Loeber and Stouthamer-Loeber, 1986; Palmo and Palmo, 1993) have shown that children from violent families and children with parents who show little affection tend to develop violent behavior problems (CDC, 1991).

The fourth group consisted of those violent youths who have histories of extreme violence and who have entered the court system due to their violent behavior. This group also includes adolescents in the penal system. Potential strategies to address this group would include skill training in such areas as conflict resolution and anger management, peer counseling and mentorships with respected members of the community, and group activities to help bolster self-esteem, trust, and group support. The final group includes those who were victims of violence, relatives of violence victims, and witnesses to violence. It may be difficult to distinguish perpetrators from victims in a high-risk violent situation.

The recommendations and effort to define groups of adolescents prone to violence by the CDC are generally positive. However, there are a few criticisms. One criticism of the CDC's guidelines is that the criteria for selecting adolescents into groups may be too rigid and narrow. The CDC has defined groups based on strict environmental factors and failed to examine others factors which could account for violence. One such factor would be psychological. The DSM-IV contains many diagnoses to account for acting-out behavior (ADHD, Intermittent Explosive Disorder, Conduct Disorder, etc.) and, when coupled with a harsh environment with few resources, could make a child significantly at risk for aggression. In addition, there are medical conditions to account for adolescent aggression such as neurological injuries, genetic and endocrinological irregularities.

Another difficulty with defining groups based on environmental factors is that one assumes a uni-modal theoretical orientation in which children in the same category receive the same treatment. It never tests the theory that within a category adolescents may have different reasons for acting-out or being aggressive. Also, these adolescents may have different behavioral or emotional presentations. For instance, one child with violent tendencies may be violent without the slightest provocation while another child has rigid controls over his aggression which break down on a few occasions. However, when this child's control breaks down on those rare occasions the result is extremely violent. If the theory of heterogeneity within categories is true, would these two children benefit from the same treatment?

A third criticism is that the CDC defines groups by external criteria, ie. by the number of violent incidents and histories of court referrals and demographic information, such as community orientation and high-risk crime areas. While such information is important, additional information which could help target the population further may be missed. Such information could include knowledge about internal characteristics of these adolescents, such as the personality and affective states of adolescents at risk. Moreover, we need to know if there is a relationship between affective reactivity, personality and violent tendencies. Investigations should examine the effect of being in these highly stressful environments on a

child's inter- and intrapersonal development. Specifically, we need to know the functional role of affective reactivity within this population. If emotional reactivity does serve a functional role, can it be altered? Lastly, we need to begin to investigate the long-term costs of being affectively reactive in a child's given environment. These are the beginning of formulations which have arisen as a result of going through the CDC guidelines.

In order to fully service the need for intervention, it is vitally important to have as much comprehensive information about the population to be treated. This study examines the problem of adolescents at risk by addressing areas such as personality variables and their interaction with other variables such as family structure, substance abuse history, and affective states, such as anger and depression. This study tests an hypothesis that adolescents at risk have differing psychosocial characteristics and behavioral presentations. If this hypothesis is true, then it may lead to more effective behavioral interventions. Additionally, it would contribute to a comprehensive picture of these adolescents and how they interact with their environment from a number of different factors.

#### Personality Characteristics Of Adolescents At Risk For Violence

This section will address the literature as to the most appropriate personality measures for adolescence. The problems confronting adolescents are generally less well known than those facing adults (Kazdin,

1992). Assessing the behavior and emotions of adolescents is a difficult chore, and a complicating factor is that for a long time there was significantly less research with adolescence compared to adults.

The Minnesota Multiphasic Personality Inventory (MMPI) is a well-known personality measure that has been extensively studied with adult populations, although it has also been used on adolescents as well. In general, the research concerning adolescent personality has been extremely limited and difficulty has arisen over a long number of years. One of the first research studies to study the MMPI responses reported by adolescents was a classic study by Hathaway and Monachesi in 1963.

Hathaway and Monachesi (1963) collected MMPIs from approximately 15,000 adolescents in the Minneapolis, Minnesota, area between the years 1945- 1963. In addition to the personality information, they collected ratings on school adjustment, school conduct, and delinquency. Hathaway and Monachesi stated that approximately 28.4 percent of the male sample was delinquent compared to 9 percent of the female sample. Hathaway and Monachesi placed delinquents on an inhibitory-excitatory continuum. They concluded that Scales F, 4, 8, and 9 of the MMPI were excitatory scales and thus successfully predicted high rates of delinquency. Conversely, Hathaway and Monachesi reported that Scales 2, 3, 7, 0, and 5 were inhibitory scales and were predictive of lower rates of delinquency. They stated that the inhibitory scales were predictive of low rates of delinquency due to the

fact that they were "neurotic" scales and individuals who scored high on these scales had low inclination to conduct delinquent acts. However, they indicated that when inhibitory scales interacted with excitatory scales, the excitatory scales served to have a stronger influence. An example is an adolescent with a two-point code type of "42" or "24". Hathaway and Monachesi (1963) predict that the constraining effects of depression would be over-ruled by the stimulatory effects of reported sociopathy. Huesmann, Lefkowitz, and Efron (1978) commented on Hathaway and Monachesi's (1963) study and reported that the best predictors of adolescent aggression and delinquent behavior were Scales F, 4, and 9.

Williams and Butcher (1989) made the argument that age-appropriate norms may be needed for adolescents who are administered the MMPI. Frequently, however, adolescent norms are problematic in adolescent age groups. The major problem with this is that on the MMPI, the adolescent norm set fails to reach clinical significance (T scores greater than 70). Subsequently, this led to the suggestion that an adolescent cut-off score of 65, rather than 70 be used to determine clinical significance (Williams et al., 1986).

To address the problems of the MMPI with an adolescent sample, Williams and Butcher (1989a and b) initiated a two-study project designed to develop a personality inventory for use by adolescents. The first study was an attempt to determine the empirical validity of the standard MMPI in a

large-scale sample of adolescents in treatment before the instrument was changed. The second study was an attempt to determine if appropriate, alternative code type classification procedures would lead to meaningful descriptors based on adolescent responses.

The first study was conducted with 844 adolescents who ranged in age from 12 to 18 years of age. This sample consisted of adolescents who were admitted to several treatment facilities between 1985 and 1988. In general, the authors stated that the MMPI clinical scales were associated with clinically relevant behavior in adolescents at risk. They found that Scale 4, 8, and 9 were strongly associated with measures of acting out for both genders. The authors concluded that Scale 6 may be an excitatory scale for males.

The Hathaway and Monachesi (1963) and Williams and Butcher (1989) found similar research findings. For example, adolescents scoring high on the excitatory continuum, "4, 8, 9," appear to display substantial evidence for acting-out behaviors. However, the Williams and Butcher study found additional evidence for adolescents with elevations on Scale 6 (Paranoia) to have characteristics similar to those with elevations on the "excitatory" dimension. The similarities in the findings of the two studies over a 15-year period demonstrate that the inhibitory-excitatory theory of the MMPI has been durable over the past several decades, although the scales which contribute to this continuum have varied somewhat.

Weaver and Wootton (1992) conducted a MMPI study with delinquent adolescents over a three-year time period using MMPI special scales. Their study had three objectives. The first was to identify the MMPI special scales that characterized the personality characteristics of delinquent adolescents. The second objective was to examine whether certain special scales could be used to discriminate between levels of recidivism, crime severity, and category of crime committed. The final objective was to discover whether special scales could be used to predict delinquent behavior more accurately than the traditional MMPI scales F, 4, 8, and 9. The subjects were 401 convicted male juvenile offenders who ranged in age from 13 to 17. The subjects were tested within two weeks of court conviction. A score was considered significant if it had a T-score of greater than or equal to 65 or less than or equal to 35. These investigators found that there was a significant difference between the T scores of the delinquent and normative groups on the following special scales: Re (Social Responsibility), MAC (MacAndrew Alcoholism Scale), Pd1 (Familial Discord), Pa1 (Persecutory Ideas), Ma2 (Psychomotor Acceleration), Si3 (Staid-Personal Rigidity), and TSC4 (Depression and Apathy). Weaver and Wootton (1992) also found significant differences between delinquents with high and low rates of recidivism on 11 of the clinical and supplementary scales: F, Pd (Psychopathic deviate), Re (Social responsibility), Ma1 (Amorality), Ma (Mania), Pd2 (Authority problems), Aut (Authority conflict), MAC

(MacAndrew Alcoholism Scale), Ma3 (Social Imperturbability), Hos (Manifest Hostility), and Pa1 (Persecutory Ideas).

Weaver and Wootton (1992) also utilized a crime index used by the District Juvenile Courts in Utah to discriminate between adolescents who engage in "serious" crimes from those who engage in less serious crimes. The MMPI special scales that they reported having the largest differences between these groups were Re (Social Responsibility), Es (Ego Strength), Cn (Control), and St (Social Status). The delinquents who engaged in less serious crimes scored higher on Mf1 (Narcissism- Hypersensitivity) and Fam (Family Conflicts). The authors also tested an hypothesis concerning those delinquents who had committed assaultive behaviors against persons versus those who had not. The high assaultive group scored significantly higher on Re (Social Responsibility), Pd1 (Family Discord), and Ma2 (Psychomotor Acceleration). In contrast, those individuals who were in the low assaultive group scored significantly high on MAC (MacAndrew Alcoholism Scale), Mf1 (Narcissism-Hypersensitivity), Sc1A (Social Alienation), Fam (Family Problems), and TSC4 (Depression and Apathy).

Finally, Weaver and Wootton (1992) discussed four composite "personalities." The first of these was the recidivist personality which was differentiated from the others on the MAC (MacAndrew Alcoholism), Pd (Psychopathic Deviate), and Re (Social Responsibility) scales. The second "personality" was termed the property offender. This group was

characterized by high scores on Pd (Psychopathic Deviate), Pd2 (Authority Problems), MAC (MacAndrew Alcoholism), Re (Social Responsibility), and Ma1 (Amorality). The third personality group was the severe offender. This group was distinguishable from others by high scores on Re (Social Responsibility), Es (Ego Strength), Cn (Control), and St (Social Status). The final group was the assaultive personality. The scales that best discriminated between the high and low assaultive personalities were Ma3 (Imperturbability), Mf (Masculinity-Femininity), and Pa2 (Poignancy). Weaver and Wootton (1992) stated that the combination of Scales F, 4, 8, and 9 may be the result of proportions of types of subgroups in each study's delinquent sample. They concluded that this combination was not accurate in discriminating types of offenders.

The Weaver and Wootton study (1992) was important in that it described aggressive adolescents as more of a heterogeneous group than has been reported in the earlier literature. However, the criteria by which they differentiated groups was based more on results from special scales of the MMPI rather than from the traditional scales.

In response to the controversies with the traditional MMPI, a more specialized version was developed in 1991 and was termed the MMPI for Adolescents (MMPI- A). In part, the MMPI- A developed from a number of criticisms about the use of the original MMPI with adolescents. These included the following: the test being too lengthy, the adolescent norms

were too outdated, the reading level may be too high, and, much of the language may be outdated (Archer, 1984, 1987; Marks, 1974; Williams and Butcher, 1989a, 1989b). Most of the research on the MMPI- A with adolescents at risk for violence is still exploratory and speculative. It has been hypothesized that use of the MMPI- A with aggressive adolescents will be similar to that of the original MMPI; however, that has yet to be put to empirical test. The differences between the two measures could account for additional Scales to be added to the "excitatory" scales, particularly Scale Pa (Paranoia).

#### FAMILY STRUCTURE AND VIOLENCE AMONG ADOLESCENTS

There have been a large number of studies over a 50-year period which have attempted to look at the family structure of violent youths. These studies have traditionally found that the family variables which contribute most to aggressiveness and delinquency include parental criminality, poor parental supervision, cruel or neglecting attitudes, erratic or harsh discipline, marital conflict, and large family size (Bahr, 1979; McCord and McCord, 1959; West and Farrington, 1973; Wilson, 1980). Studies have also examined the role of family interaction patterns and the general emotional environment of the family as it relates to delinquency. These studies have tended to conclude that delinquents are more likely to be raised in families which tend to exhibit more conflict and less stable family interaction patterns (Alexander, 1973; Faunce and Riskin, 1970). In general, research

has found that the most violent adolescents are more likely to be found in physically abusive households (Lewis et al., 1989). In fact, a history of abuse and/ or family violence, were found to be one of the best predictors of adult violent crimes (Lewis et al., 1989).

The emotional environment of the home is also important in distinguishing delinquents from nondelinquents (Veneziano and Veneziano, 1992). In general, families of delinquents were more likely than families of non-delinquents to express rejecting attitudes and to exhibit a lack of warmth and affection (West and Farrington, 1973). In terms of parental discipline styles, the parents of delinquents are more likely to be more punitive, gave more vague commands, and were generally less effective in stopping children's deviant behavior (Patterson, 1982). Singer (1974) concluded that a configuration of very restrictive family policy, lax policing, and lenient punishing were more common among the family of delinquents.

There has also been a wealth of research on communication pattern differences between delinquents and non-delinquents. Alexander (1973) found that delinquent families evidenced higher rates of defensive communication and lower rates of supportive communication than non-delinquent families. He further noted that conversations in the families of delinquents were disjointed and disorganized, and the actual communication

was unevenly distributed, with one member dominating during family discussions.

A recent study by Veneziano and Veneziano (1992) attempted to examine the family functioning of male juvenile delinquents using the Family Environment Scale (FES). The FES, developed by Moos and Moos (1981), is a 90-item psychological measure that asks respondents questions about their perception of the family environment in a true-false format. This instrument provides 10 subscales, with means of 50 and standard deviations of 10. They also attempted to develop a typology of family social environments using cluster analytic techniques. They examined the resulting subgroups on a number of dimensions, including intellectual, personality, and behavioral characteristics, in an attempt to determine if the groups differed in ways that would have implications for research and treatment. The subjects in their study consisted of 411 institutionalized male adolescents who were committed as adjudicated delinquents to a state department of corrections. The only exclusions were those delinquents who transferred to another facility, or were released before they could complete the five-workday classification process. Subjects ranged in age from 11-7 to 16-4, with an average age of 14-9. The ethnic distribution of the sample was 52% white and 49% African-American. Of these subjects, 67.6% were serving their first offense and 57.9% were committed for one offense. Approximately 67% were committed for property offenses, with the second

most common offense being of "probation violations." The resulting analysis produced seven clusters, which classified 93.9% of the FES profiles. They discovered that other analyses yielded clusters which were either too small or too large to be statistically meaningful. They termed Cluster 1 the Denial of Conflict. These subjects were similar to a norm group except in the area of the open expression of anger. The subjects in Cluster 1 were the oldest group and 95% were first time offenders. Cluster 2 was termed the Repression of Expression and they were consistently low on measures of anger and hostility. However, they were highest in terms of being aware of limited opportunity. Cluster 3 was termed the Suppression of Independence. Families of these delinquents were attempting to establish strong controls but that independence was discouraged and conformity was encouraged. This group was the second highest in terms of state and trait anger and were also high in terms of state and trait anxiety. The Cluster 4 (Unstructured Conflict) had very high Conflict scores and low scores on other subscales. They were the youngest group and had the highest scores on measures of anger and impulsivity, and were likely to be the group that rejected middle-class values. Cluster 5 was termed Structured Conflict and they had high Conflict Scores but also had high Control Scores and average scores on the other scales. Cluster 6 was termed Unstructured Control. They were characterized by little expression of freedom and with little emphasis on independence outside of the household. Subsequently they typically had

little involvement in activities outside of the house. In addition, the parental style was characterized by mild attempts at maintenance and control. Collectively as a group, Cluster 6 fell within the middle of the scores received in the assessment measures. Finally Cluster 7 was termed Structured Control and were characterized by a high emphasis on maintenance, control, and achievement, and low emphasis on expression of feelings and independence. Cluster 7 had the lowest anger scores, but the second highest anxiety scores.

Veneziano and Veneziano (1992) summarized that most of the adolescents had relatively high scores on the scales of Organization and Control, suggesting that their families were not characterized by an absence of structure. They imply that the families of delinquents establish rules and procedures, but they have a hard time implementing these procedures due to inappropriate or ineffective monitoring and disciplining. They also found that the subset of delinquents who live in homes with a higher degree of conflict tend to exhibit more severe difficulty. These findings are consistent with the literature that found associations between abusive and/ or violent homes and aggressive behaviors among delinquent adolescents (Lewis et al., 1988). Veneziano and Veneziano (1992) concluded that delinquents are not a homogeneous population in terms of presenting symptomatology, and need a multidimensional assessment approach when complex constructs such as family dynamics are an issue.

The Veneziano and Veneziano (1992) study is interesting in pointing out the affective states of the delinquents involved in the study. Many of the clusters described in their study had abnormally high levels of anger and anxiety. In terms of anger, the majority of the clusters had chronically high levels. The researchers described their population well in terms of heterogeneity, but it would be fascinating to assess how the dimension of anger and anxiety in these groups differed. We know that anger can be assessed in a number of distinct dimensions. Examples of differing anger styles include hostility (trait anger), suppressing angry feelings for fear of letting others know one is angry, overt anger expression, and frequent attempts to consciously control the overt expression of anger. Since Veneziano and Veneziano (1992) found a relationship between affect and family structure, do these factors interact with personality variables discussed before in the previous section? The inclusion of variables assessing both family factors and anger in adolescents at risk in the present study should help to clarify the potential interaction or role of these factors in this group.

#### ANGER:

Anger is considered to be an affective state which can consist of feelings of irritation, irritability, annoyance, fury, and rage. This affective state is known to activate the autonomic nervous system (ANS) and to involve the endocrine system as well (Johnson and Greene, 1992, pg. 25).

It is also known to cause tension in the skeletal musculature, antagonistic thought patterns, and aggressive behaviors (Johnson and Greene, 1992). The experience of anger is typically a complex emotional and physiological pattern that can be elicited in interpersonal and social situations among individuals who have a strong proneness (trait) to experience anger. When discussing anger, it is typically important to distinguish between the experience and expression of anger. Generally the experience of anger can be characterized by frequency, intensity, and duration. The expression of anger can be conceptualized as a single, bipolar entity which can range from suppression of angry feelings to expression of anger through aggressive behavior towards other individuals or objects in the environment (Spielberger, 1988). It is important to understand the emotional experience of anger before one can conceptualize the much broader concept of hostility.

Typically, hostility has been understood to contain angry feelings but it may also have the added dimensions of negative and destructive attitudes and beliefs. Thus hostility may motivate aggressive and violent acts, particularly in interpersonal situations. Aggression is said to describe destructive and punitive behaviors directed against another. The feelings of anger often result in hostility and aggression, although anger is not a necessary precursor in either of these states. Unfortunately, the concepts of anger, hostility, and aggression are often used interchangeably in research literature as with the lay public (Johnson, 1990).

Anger has been conceptualized by a model proposed by Spielberger (1988). The model conceptualizes anger as a psychophysiologic response that can be elicited in social situations where an individual feels (a) loss or threat of loss of (b) something felt to be possessed (rights, job, marriage, or physical objects) through (c) perceived arbitrary, unfair, and unjustifiable acts by others (people, select groups, or society). The behavioral manifestations of anger can involve overindulgence or overuse of alcohol, cigarettes, illicit or over-the-counter drugs, and food.

#### Hostility Types and Anger-Coping Styles

The social learning theory of aggression proposed by Bandura (1973) suggests that aversive stimulation can produce a general state of emotional arousal that can promote a host of accompanying behaviors. Depending on a person's cognitive appraisal of the situation and the environment, the accompanying emotional arousal can be interpreted as anger (Hecker & Lunde, 1985, pg. 227). This anger can be expressed as aggressive behavior ranging from a deviant thought to physical violence depending on an individual's learned social skills. Usually this anger will dissipate and leave an individual free for new emotional experiences; however, feelings of anger can be prolonged or compounded on subsequent occasions by recalling or focusing on provocative situations. Individuals who frequently become angry in the absence of distinctive external stimuli may be seen as exhibiting chronic hostility.

Chronic hostility is not formally recognized as psychopathology according to the Diagnostic and Statistical Manual of Mental Disorders: 4th Edition (DSM-IV); although chronic hostility has been implicated in a number of psychiatric disorders which include Somatization Disorder, Intermittent Explosive Disorder, Conduct Disorder, Oppositional Defiant Disorder, Antisocial Personality Disorder, and Borderline Personality Disorder (American Psychiatric Association, 1994). Common characteristics of individuals with chronic hostility can include deficits in social skills; lack of sensitivity in interpersonal situations; failure to recognize the consequences of their behavior; and, being unable to see a situation from another person's viewpoint (Spivack, Platt, & Shure, 1976). The intense emotional arousal from anger-intensive individuals may impair cognitive appraisal of aversive situations and can help to facilitate impulsive behavior (Zillman, 1983).

The etiology of chronic hostility is largely unknown. Role-models such as parents can influence the development of attitudes and behavior patterns. Among these also would be unstable family patterns including but not limited to abusive families or neglectful families. Other factors influencing chronic hostility could include feelings of inadequacy or insecurity, unrealistic views and expectations, and insufficient skills for dealing with stressful situations (Hecker & Lunde, 1985).

Some approaches to address the problem of chronic hostility have been proposed (Novaco, 1975; Novaco, 1985; Glick & Goldstein, 1987). Usually these approaches have addressed the issues of correcting behavioral and cognitive deficits that may underlie chronic hostility. In addition, relaxation training and systematic desensitization are used to manage the physiological correlates of emotional arousal (Novaco, 1985). However, chronically hostile individuals do not represent a clinically homogeneous group. Although all chronically hostile individuals should be able to benefit from stress inoculation training, the authors propose that treatment should be tailored to meet the specific needs of individuals (Hecker & Lunde, 1985).

#### Typology of Chronic Hostility:

Individuals prone to chronic hostility have been conceptualized by Hecker and Lunde (1985) as belonging to three main types, each of which can be further divided into two subtypes. The three main groups have been termed the Uncontrolled Anger Type (Type 1), the Overcontrolled Anger Type (Type 2), and the Suppressed Anger Type (Type 3).

The first type (Uncontrolled Anger) has been described as experiencing anger emotionally and readily translating their angry feelings into violent or aggressive behavior. These types were originally described by Megargee (1966, 1982) as having weak inhibitions against aggressive behaviors and exerting little or no control over instigation

towards aggression. This type was divided into two subtypes: the Impulsive Undercontrolled Type and the Deliberate Undercontrolled Type.

The Impulsive Undercontrolled type experiences anger emotionally and acts impulsively with little or no deliberation. When they are provoked, this type will react quickly and many times will disregard personal safety and impulsively cause accidents that may cause injuries to others or themselves. For example, an adolescent may become angry at another and will commence a "drive-by" accident with innocent bystanders in the line of fire.

The Deliberate Undercontrolled type experiences anger that does not directly lead to aggressive behavior. They do not usually behave impulsively, but will instead plan for aggressive behavior to be carried out later. Because the aggressive behavior is separated in time from the angry event, the aggressor is able to act anonymously (Hecker & Lunde, 1985). Typical deliberate acts performed by them include conspiring with others to defeat a competitor, plagiarism, embezzlement, and homicide.

The second main type (Overcontrolled Anger) commonly experiences the emotion of anger, but their angry feelings are strongly suppressed and not translated into aggressive behavior. Megargee (1966; 1982) described this type as having strong inhibitions against aggressive behavior; they exert enormous control over provocations to aggression. This type can be further divided into two subtypes: Stable or Unstable Overcontrolled types.

The Stable Overcontrolled type traditionally have strong controls over the engaging of aggressive behaviors. Even under conditions of extreme stress, they manage to control their responses to nearly every provocation to aggression. When challenged, an individual of this type may adopt a passive stance or withdraw so as to avoid an unpleasant emotional exchange. However, the emotionally provoking incident is likely to be remembered for a long time. The Stable Overcontrolled type have a tendency to become preoccupied with their unexpressed thoughts and feelings that they may neglect their health by smoking or eating too much, exercising too little, or ignoring the early symptoms of physical disorders.

The Unstable Overcontrolled type also has strong inhibitions against displaying emotionality yet, under conditions of extreme stress, the inhibitions against aggression may fail for reasons which are not clearly understood. Extremely violent criminal behavior may result, including multiple homicides. Individuals who commit these crimes are usually remorseful afterward, and are able to reconstruct their former, unstable inhibitions.

The third chronically hostile type has been termed the Suppressed Anger type. The research suggests that this type does not experience anger directly but rather the anger is suppressed and functions as a source of anxiety, pain, or other maladaptive behavior (Hecker & Lunde, 1985). Since their cognitions are separate, these individuals are usually surprised when

others around them call them angry or hostile. Their tendency may be to suppress other emotions too, and their general responses to common situations may lack genuine, appropriate affect. The two subtypes of the Suppressed Anger type can be differentiated on the basis of whether or not their interpretations of reality are normal or psychotic.

The Normal Suppressed type is a hostile type that will become anxious and engage in unproductive behavior when confronted by a difficult or frustrating situation. To obtain a sense of relief from their psychological distress, these individuals may engage in unnecessary work or leisure-time activities that will keep them constantly busy.

The second suppressed anger type is the Psychotic Suppressed anger type. These individuals often present with a distorted perception of reality, and their responses to situations and events are often inappropriate. This may be present in psychotic depression or schizophrenia, where one has to infer the presence of overt hostility.

It is believed that adolescents at risk are a heterogeneous group in terms of personality and anger presentation. The three major hostility types (Undercontrolled, Overcontrolled, and Suppressed) are hoped to be found in adolescents at risk. The Undercontrolled Anger Types, theoretically, would be the easiest to identify due to their frequent presentations of anger. Particularly, they would be easy to identify by self-report measures given the low energy invested to contain anger.

In contrast to the Undercontrolled Anger Types, the Overcontrolled and Suppressed Anger Types would be more difficult to separate out on self-report measures compared to normal adolescents. On self-report measures, it is hypothesized that the Overcontrolled Anger Type, Suppressed Anger Type and normals would all score within normal limits. To assist in further dividing these groups into accurate subgroups would require additional assessment devices, such as semi-structured or structured interviews. In addition, retrieving information from secondary sources, ie. school officials or parents, would be invaluable in providing an accurate portrait of anger presentation over a period of years. For instance, one would predict that the Overcontrolled Anger Type would have only a few instances of violent presentations; however, these presentations would be extremely violent in general and well out of proportion to the individual's usual presentation. The Suppressed Anger Type could be hypothesized to have frequent anger demonstrations, but would not attribute their outburst to anger. For the Suppressed Anger Type, an interview could also provide information about an individual's verbal display, such as verbal stylistics, to better verify the existence of this anger type. Although information, such as interview data, will not be gathered in this study, hopefully the results of this study will guide the way for more expansive research.

## CHAPTER 2 METHODS

### Subjects

Subjects were 119 male adolescents between the ages of 13 to 18 years old, who were currently enrolled in alternative schools for behaviorally disruptive children and juvenile detention centers located in the regions of North Central Florida, South Central Alabama and Atlanta, Georgia. This study collected self-report data from the students. After the data records were collected the sample was classified according to demographic information such as age, ethnic affiliation, family organization (single parent, dual parent, etc.) and occupation of parent. The last 20 subjects only have demographic information and completed MMPI-As. They were missing the STAXI, STAI and the FES. A description of the demographic questionnaire is included in Appendix A.

### Procedures

Prior to testing, the proper administration protocol and the nature of the tests were explained to the subjects in a group format. If students had difficulty understanding the official procedures detailed above, it was explained to them on an individual basis. Support was obtained from the

identified schools and detention centers in the Florida, Alabama, and Georgia areas prior to testing. All test procedures were scrutinized by an Institutional Review Board (IRB) at the University of Florida before testing commenced.

The tests involved in this research project were administered in a small group setting at a child's school. Subjects were assigned into groups based on reading levels, which was accessed in a student's academic record or by consultation with the child's teacher. Those research subjects with a reading level above the sixth grade level were administered the tests in their usual, standardized format. However, for those subjects with a reading level below the sixth grade level, an audio-taped version of the test measures was administered. The time required to finish all of the test procedures was between 60 minutes to 120 minutes. Those children who completed all of the test measures received a five-dollar gift certificate for use at the McDonald's restaurant.

#### Test Measures:

There were four assessment measures employed in this study. They were the Minnesota Multiphasic Personality Inventory for Adolescents (MMPI- A), the State- Trait Anger Expression Inventory (STAXI), the State- Trait Anxiety Inventory (STAI), and the Family Environment Scale (FES).

### Minnesota Multiphasic Personality Inventory- Adolescents (MMPI- A):

The MMPI-A was developed in 1989 in order for adolescents to have a personality instrument that better reflected their outlook on life and stage of human development than the original MMPI. It has been noted by previous authors (Archer, 1984, 1987; Marks, 1974; Colligan and Offord, 1989; Williams and Butcher, 1989a, 1989b) that the original MMPI had a number of limitations when the instrument was used by adolescents. One of these limitations was the fact that many felt as though the item content was inappropriate for use with adolescents; partly due to the fact that they were written for adults. The problems may be subtle such as the verb tense being inappropriate or there were not enough content suitable for young people. Another complaint was that there appeared to be a lack of content or research scales suitable for adolescents. A third limitation concerned the fact that many adolescents have a characteristic high responding on some scales, such as the F Scale on the MMPI, which may in part reflect their feeling of alienation or identity diffusion (Archer, 1984, 1987). The F Scale in itself may be developmentally unsuitable for this group. A final problem concerned the problem of selecting which norms to use with adolescents since the MMPI uses both adult and adolescent norms. The adolescent norms were developed by Dahlstrom, Welsh, and Dahlstrom (1972) and Marks et al. (1974). Both of the adolescent norm sets were T-scale conversion tables for adolescent scores. Authors have shown that the use of

adult norms tended to over-psychopathologize typical adolescents.

Colligan and Offord (1989) concluded that adolescent responding to the MMPI was decidedly different from adult responding.

The committee to develop the MMPI- A was formed in 1989. The committee was termed the MMPI Adolescent Project Committee and was appointed by Beverly Kaemmer of the University of Minnesota Press. The committee had two recommendations. The first recommendation the University of Minnesota Press publish a separate form of the MMPI with separate norms for adolescents. The second recommendation was that the MMPI- A have the same standard scales as the MMPI.

The original form of the MMPI- A (Form TX) contained 704 items. The 704 item booklet was used for the adolescent normative data collection and in a clinical sample described by Williams and Butcher (1989a, 1989b).

The committee recognized the need to reduce the total number of items to make the instrument more appealing to adolescents. The final version of the test had items comprising the original validity indicators L and K, new indicators F1 and F2, the original clinical scales, new Content Scales, existing supplementary scales MAC- R, A, and R, and a new scale, IMM (Immaturity), were included in the MMPI- A. The final version that resulted contained 478 items arranged such that all of the items on the basic scales, as well as a number of items of new uniquely adolescent items, Content

Scales, and supplementary scales are not obtainable in the first 350 items, but require administering the full MMPI- A.

#### MMPI- A Validity Indicators:

The MMPI- A Lie scale consists of 14 items and it was designed to measure naive attempts by teenagers to put themselves in a favorable light.

The MMPI- A F scale is divided into a 33-item F1 scale and a 33-item F2 scale. This scale was developed to measure the frequency of endorsement of infrequently used items. The F1 scale covers those items that occur in the first 350 items of the test and F2 covers those that appear later in the test. It was generated in this way to possibly identify adolescents who have changed his or her test-taking approach in the later stages of the testing administration.

The MMPI- A K scale consists of 30 items and is thought to be a measure of defensiveness.

#### MMPI- A Clinical Scales:

Scale 1 (Hs: Hypochondriasis): This scale consists of 33 items that were selected to identify clients with a history of symptomatology characteristic of hypochondriasis.

Scale 2 (D: Depression): The D scale is composed of 60 items that have been chosen to reflect general feelings of dissatisfaction, hopelessness, and possibly suicidal ideation.

Scale 3 (Hy: Hysteria): This scale is comprised of 60 items that were selected to identify individuals who respond to stress with hysterical reactions that include sensory and motor impairment without an organic basis.

Scale 4 (Pd: Psychopathic Deviate): This scale consists of 49 items. It is developed on the basis of responses from adolescents with patterns of lying, stealing, sexual promiscuity, and alcohol abuse.

Scale 5 (Mf: Masculinity-Femininity): The Mf scale is a measure of stereotypic masculine or feminine interests.

Scale 6 (Pa: Paranoia): This scale is comprised of 40 items. It is used to identify patients with a high degree of paranoid symptomatology.

Scale 7 (Pt: Psychasthenia): This scale was developed in order to measure symptoms related to obsessive-compulsive disorder including anxiety and rumination. It is composed of 48 items.

Scale 8 (Sc: Schizophrenia): This scale has 77 items. It is used to reflect those individuals who endorse bizarre thought processes, peculiar perceptions, social isolation, disturbances in mood and behavior, and difficulties in impulse control.

Scale 9 (Ma: Hypomania): This scale consists of 46 items designed to identify patients manifesting hypomanic symptoms.

Scale 0 (Si: Social Introversion): This is a scale designed to measure scores on social relationship problems.

A test-retest was conducted on normative sample of 154 subjects. These subjects completed one complete test questionnaire and then were asked to complete the same questionnaire a week later. Pearson Product-Moment test-retest correlations for the sample were calculated. The correlations ranged from values of .65 to .84 for the three validity scales and the ten clinical scales.

#### The State- Trait Anger Expression Inventory (STAXI):

The State- Trait Anger Expression Inventory (STAXI) is a measure designed by Spielberger (1988) that is used to assess the experience and expression of anger. One of the primary reasons the STAXI was developed was to provide a technique to evaluate the components of anger that can be utilized for evaluations of normal personalities and personality disorders (Spielberger, 1988).

The STAXI is composed of 44 items. With these 44 items, one can derive six major scales and two sub- scales. The six major scales are State Anger (10 items), Trait Anger (10 items), Anger- In (8 items), Anger- Out (8 items), Anger Control (8 items), and Anger Expression (24 items). The sub-scales are Angry Temperament (4 items) and Angry Reaction (4 items).

The State Anger scale was designed to measure the magnitude of anger felt at the time of testing. The Trait Anger scale assesses an individual's disposition to experience anger in different situations. Subscales to the Trait Anger Scale are Angry Temperament and Angry Reaction. Angry

Temperament is a measure of a general predisposition to experience anger with little or no provocation. Angry Reaction assesses subject differences in the experience of anger when unfairly evaluated or treated harshly by other individuals.

Anger- In measures the frequency at which an individual is likely to restrain angry feelings because the individual is uncertain of what to do with the angry affect. Conversely, Anger- Out is an anger expression scale which assesses how an individual expresses anger to other people or objects in the environment. Anger Control professes to measure an individual's frequency to control the feelings of anger.

Finally, Anger Expression is a general measure of the frequency at which anger is expressed. Anger Expression assesses general angry affect regardless of the direction of the expression.

Information about the internal consistency of the STAXI scales was gathered from different samples (Spielberger, 1988). These samples consisted of male and female college undergraduates, adolescents, adults who were not college students and Navy recruits in the Tampa, FL area. For all scales, Cronbach's coefficient alphas ranged from .70 to .87 reflecting a high degree of internal consistency. Test-retest correlations of all of the scales ranged from .58 to .75.

### The State- Trait Anxiety Inventory (STAI):

The State- Trait Anxiety Inventory (STAI) was a measure designed by Spielberger (1983) to evaluate an individual's experience of anxiety. The measure was designed to be self-administering and may be administered either individually or in groups. Completion time for the STAI ranges from 10 to 20 minutes. The STAI assesses two indices of anxiety: State- Anxiety (S- Anxiety) and Trait- Anxiety (T- Anxiety). S- Anxiety consists of 10 items, conversely T- Anxiety is composed of 11 items.

When administered, Spielberger recommends that the S- Anxiety Scale should be administered first, followed by the T- Anxiety Scale, due to the fact that the S- Anxiety scale is sensitive to the conditions by which the test is administered and can be influenced by feelings created by the T- Anxiety Scale.

Each STAI item is given a weighted score of 1 to 4. A rating of 4 suggests high anxiety while a rating of 1 implies low levels of anxiety. Norms for the STAI were collected on working adults, college students, high school students, and military recruits. The high school sample consisted of 424 tenth-grade students who were tested in their schools (Spielberger, 1983). Cronbach's coefficient alphas for the high school sample .90 for the State and the Trait Anxiety scales. Test-retest reliability coefficients were calculated for both scales and the values ranged from .65 to .75 (Spielberger, 1983).

### The Family Environment Scale (FES):

The Family Environment Scale (FES) (Moos & Moos, 1994) is a 90- item test that was designed to assess three dimensions of family functioning. The first of these dimensions is relationships. The relationship dimension is global and attempts to reflect several areas such as belonging, pride, open expression, and conflict. Another dimension is personal growth and development. Central to this theoretical dimensions are such areas as autonomy, academics, competitions, family activities, and religious emphasis. The final dimension is system maintenance which deals with centers around the structure and organization of the family. The system maintenance dimension also examines the amount of perceived control exercised over each member. The FES is a self-report device which can be given independently to individual family members. The ten subscales of the FES are represented as T scores with means of 50 and standard deviations of 10. Internal consistencies were calculated for the ten scales of the FES based on a normative sample of 591 individuals (Moos & Moos, 1994). Cronbach's coefficient alphas ranged from .61 to .78. Test-retest reliabilities were calculated at two-month intervals and values for the ten scales ranged from .68 to .86.

### Hypotheses:

1) The first hypothesis proposed that adolescents at risk are a heterogeneous group in terms of personality presentation. It was predicted that these adolescents will fall into four distinct personality groups based on MMPI scale scores. These personality groups could be postulated as falling along the "inhibitory- excitatory" continuum originally proposed by Hathaway and Monachesi (1963). One can expect an "inhibitory" group with elevations on many of the inhibitory scales, an "excitatory" group with elevations on many of the excitatory scales, a mixed group with features of both and a non-elevated group.

2) The personality cluster groups which have been discussed in the first hypothesis were postulated to differ on the following four variables: anger expression, trait anxiety, maternal control, and trait anger. It was proposed that each personality cluster group would have distinctive patterns of responding to each of these variables. This is related to the research in the literature of heterogeneous patterns of responding to family environment and affective data which was influenced by the work of Veneziano and Veneziano (1992).

It was further hypothesized that the personality groups would have differing responses on the dimensions of anger-in, anger-out and anger control.

3) The third hypothesis proposed that there is a distinct relationship between high levels of chronic anger (hostility), levels of perceived family conflict, family cohesion, and delinquency. This hypothesis seeks to help define the assessment and evaluation of the Undercontrolled Hostility Type.

#### Statistical Analyses:

1) The first analysis consisted of a cluster analysis with the following scales of the MMPI- A: F, 2, 3, 4, 5, 6, 7, 8, 9, 0. There were five "inhibitory" scales that were investigated and they were 2, 3, 5, 7, and 0. In addition, there were five "excitatory" scales and they consisted of F, 4, 6, 8, and 9. A hierarchical, agglomerative cluster analysis (Centroid linkage method), which utilized squared Euclidean distances between scale items, was conducted to maximize heterogeneity among cluster groups. This followed the hypothesis which stated that adolescents-at-risk for violence are a heterogeneous group in terms of personality presentation.

2) The second analysis consisted of running several one-way ANOVAs to verify the evidence provided in the cluster analysis with personality cluster group as the independent variable. Differences in the four dependent variables (anger expression, trait anxiety, maternal control, and trait anger) were examined. It was predicted that individual cluster groups can be differentiated by the four dependent variables listed above.

Additional analyses were conducted with anger-in, anger-out and anger control as dependent variables. Personality cluster group remained the independent variable.

3) The third analysis was a series of independent linear regression equations with Trait Anger, Anger-In, Anger-Out, and Anger Control as the dependent variables. Maternal care, family conflict, and delinquency were entered as independent variables.

## CHAPTER 3 RESULTS

### Subject Characteristics

Sample information collected is described below. Information was collected from subjects (N = 119) from a number of testing sites in northwest Florida (Alachua and Marion counties), central Alabama (Eufaula, AL), and northeast Georgia (Atlanta, GA). The average age of the collection sample was 16 years old (N= 119, standard deviation = 1.04). The minimum age was 13 years old and the maximum age was 18 years old. The average grade level for the subjects was 10th grade with a standard deviation of 1.2. From information collected in the sample, 60.9 % of the sample described themselves as African-American, 31.5 % of the sample as White, 5.2 % of the sample as Latino, 1.1 % as Native American and 1.1 % as "Other." In addition, further breakdowns of the sample revealed that 22.8 % of the sample resided with their biological parents, 31.5 % resided with one biological parent and a step-parent, 33.6 % with a single-parent (29.3% were single mothers), and 12 % had "Other" arrangements. These other arrangements included additional family members including grandparents, aunts or uncles, or frequently children were wards of the state.

Of those children who lived with at least one of their biological parents, 80.4% of the parents were employed and 19.6 % were described as unemployed. Lastly, 84.8 % of the sample indicated that they had an arrest history and 15.2 % had no arrest history. Subject characteristics are described in Table 1.

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Table 1: Mean subject characteristics (N= 119)

	<u>Mean</u>	<u>Range</u>
Age	16	13-18
Grade Level	10	8-12
<u>Ethnicity</u>		
African-American	60.9%	
White	31.5%	
Latino	5.2%	
Native American	1.1%	
Other	1.1%	
<u>Family Structure</u>		
Both biological parents	22.8%	
Biological parent and step-parent	31.5%	
Single parent	33.6%	
Other arrangements	12.1%	
<u>Parental Employment Status</u>		
Yes	80.4%	
No	19.6%	

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Table 1 Cont.

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<u>Arrest History</u>	
Yes	84.8%
No	15.2%

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Information from the MMPI-A is described below (See Table 2).

Table 2: Mean MMPI- A scores for the entire sample

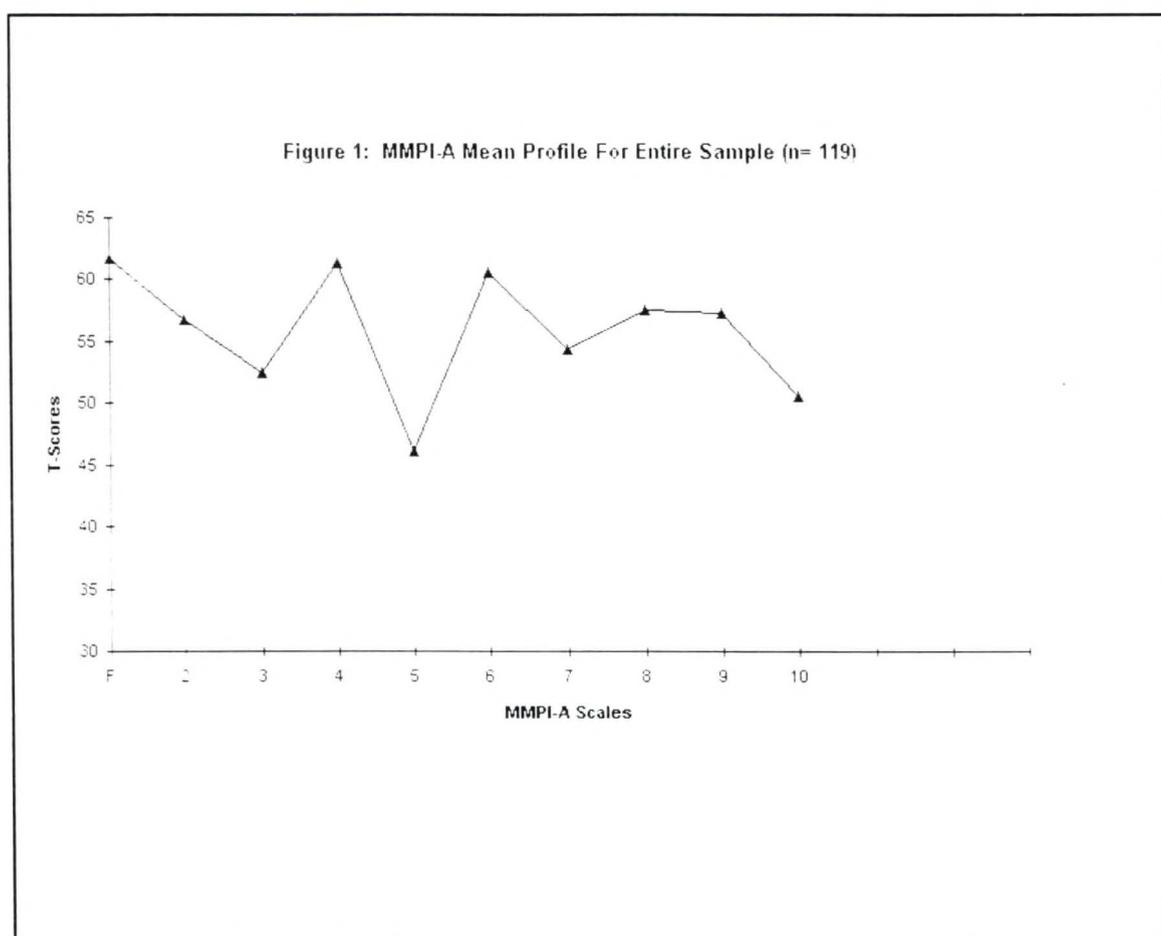
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	<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
F Scale	61.64	11.23	40	88
Scale 2	56.73	10.38	32	81
Scale 3	52.39	9.72	31	82
Scale 4	61.29	10.14	44	99
Scale 5	46.08	7.65	30	64
Scale 6	60.50	13.44	35	107
Scale 7	54.29	9.55	32	78
Scale 8	57.54	12.15	34	92
Scale 9	57.26	12.20	32	100
Scale 10	50.56	8.13	30	67

(N = 119)

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The cut-off score for the MMPI-A was based on average subject scores based on a normative sample. Information from Table 2 shows that no scale had a clinical elevation (T score > 65) compared to the normative sample. However, it should be noted that many of the highest scales had the greatest standard deviations. Information on the mean sample MMPI-A distribution is illustrated in Figure 1.



Data was collected on the STAXI. Table 3 displays the mean score, standard deviation and percentile rank for the STAXI. The percentile rank comparisons for these scores were based on average subjects in a normative sample.

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Table 3: Mean STAXI scores for the entire sample

	<u>Mean</u>	<u>Standard Deviation</u>	<u>Percentile Rank</u>
State Anger	17.50	7.41	77th
Trait Anger	22.47	6.12	45th
Trait Anger/ Temperament	8.30	3.16	52nd
Trait Anger/ Reaction	9.66	3.04	62nd
Anger-In	17.77	4.13	57th
Anger-Out	18.12	4.59	71st
Anger Control	21.17	4.94	37th
Anger Expression	30.78	8.89	67th
N=99			

---

On the STAXI there were clinical elevations (percentile rank > 75) on State Anger only when the present sample was compared to a normative sample. However, Anger Out and Anger Expression were substantially elevated as well.

Tables 4 and 5 illustrate the results of the STAI and the FES respectively.

Table 4: Mean STAI scores

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	<u>Mean</u>	<u>Standard Deviation</u>
State Anxiety	41.68	10.97
Trait Anxiety	43.71	9.85

N = 99

---

Both State and Trait Anxiety scores for the subject group fell within the normal range. The means for both the STAI and the FES were based on a normative sample.

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Table 5: Mean FES scores

	<u>Mean</u>	<u>Standard Deviation</u>
Family Cohesion	44.09	12.65
Family Conflict	52.46	9.48
Family Control	52.25	10.36

N= 99

---

T-tests were conducted between the normative sample means and standard deviations and the means and standard deviations of our sample for the FES. All t-tests were significant. Family cohesion was found be significantly lower than the normative sample [ $t_{0.05, 98} = -5.09$ ]. Family Conflict [ $t_{0.05, 98} =$

2.83] and Family Control [ $t_{05, 98} = 2.36$ ] were found to be significantly higher than the normative sample.

### MMPI-A Scores and Ethnicity

The majority of subjects within this sample were African-American.

Previous research on the MMPI has suggested differences between certain validity and clinical scales by ethnicity. Comparison tests were conducted between MMPI-A scales F, 2, 3, 4, 5, 6, 7, 8, 9, 0 and ethnicity (African-American and White). See Table 6 below.

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Table 6: MMPI-A scores by ethnicity (African-American and White) N= 119

<u>Scale</u>	<u>African-American</u>		<u>White</u>		<u>Significance Level</u>
	Mean	SD	Mean	SD	
Scale F	61.78	10.37	60.79	10.37	.25
Scale 2	55.88	10.28	56.45	11.21	.94
Scale 3	51.61	9.40	52.38	10.09	.82
Scale 4	60.10	9.34	62.28	11.70	.35
Scale 5	45.72	8.50	45.73	6.42	.07
Scale 6	58.99	10.67	61.21	18.55	.00
Scale 7	53.07	7.70	54.38	12.50	.00
Scale 8	57.54	11.00	56.55	15.80	.02
Scale 9	58.06	11.53	55.79	14.23	.67
Scale 10	50.00	7.56	49.62	9.92	.06

According to this analysis, Whites were significantly higher than African-Americans on Scale 6 (Paranoia) and Scale 7 (Psychasthenia). African-Americans were significantly higher on Scale 8 (Schizophrenia). Additionally, there was a trend towards African-Americans being higher on Scale 5 (Masculinity-Femininity) and Scale 10 (Social Introversion).

#### Cluster Analysis:

##### Centroid Method

The first analysis consisted of a cluster analysis with the following scales of the MMPI-A: F, 2, 3, 4, 5, 6, 7, 8, 9, 10. A hierarchical cluster analysis (Centroid linkage method) which utilized squared Euclidean distances between individual scale items was used. The Centroid linkage method was utilized due to the nature by which it can maximize compact clusters composed of similar cases. The Single linkage method was excluded due to the fact that it has a tendency to form long, elongated clusters (Aldenderfer & Blashfield, 1984, pg. 39). Consequently, Ward's method was not utilized because it has difficulty when sample size exceeds 100 cases and it generates solutions that are strongly influenced by profile elevation (Aldenderfer & Blashfield, 1984, pg. 44). Squared Euclidean distances were utilized in order to maximize the dissimilarity of unlike clusters. The analysis was run on SPSS-Windows Version.

A dendrogram of the initial cluster analysis results strongly suggested a three-cluster solution to the sample. Moreover, an inspection of the fusion coefficients (the numerical value at which various cases merge to form a cluster) suggested a trend in which there was a substantial "jump" in the value of the coefficients at the three-cluster solution. However, both of these methods are highly subjective and susceptible to experimenter bias (Aldenderfer & Blashfield, 1984, pg. 54). Mojena (1977) and Mojena and Wishart (1980) developed a procedure to objectively evaluate the optimal partition of a hierarchical clustering procedure. Their equation examines the value of the fusion coefficient at a given stage of the clustering process ( $Z_{j+1}$ ), the mean value of the fusion coefficients ( $z$ ), the standard deviate ( $k$ ), and the standard deviation of the fusion coefficients ( $s_z$ ). For the standard deviate, Mojena (1977) suggested a value of 3.00 to test for significance. The equation is illustrated below.

$$Z_{j+1} > z + ks_z$$

Based on the results of the initial cluster analysis, the following values were derived:  $Z_{j+1}$  ( $Z_{116}$ ) = 3189.87;  $z$  = 621.78;  $k$  = 3.00;  $s_z$  = 631.16. The null hypothesis would be a cluster of one if the value of  $Z_{j+1}$  can not exceed the value of  $[z + ks_z]$ .

$$Z_{116} > z + ks_z$$

$$3189.87 > 621.78 + (3)(631.16)$$

$$3189.87 > 2515.27$$

Utilizing the information available in this equation, the best solution suggested was the three cluster solution. Therefore, the null hypothesis was rejected.

Table 7: Age and educational level for personality cluster types.

	Cluster 1 (N= 58)	Cluster 2 (N= 25)	Cluster 3 (N= 36)
Age	16	16	16
Educational Level	10	10	10

There were no statistical differences between the three personality cluster types on age or level of education.

#### MANOVA and MMPI- A Variables:

To determine if there was an effect of cluster type among MMPI- A variables, a MANOVA was conducted with the MMPI- A scales as dependent variables and cluster type as an independent variable.

Table 8: MANOVA of MMPI- A Variables and Cluster Type

<u>Scale</u>	<u>F-Score</u>	<u>Significance Level</u>
F Scale	4.98	.01
Scale 2	2.56	.08
Scale 3	8.19	.00
Scale 4	10.14	.00

Table 8 Cont.

<u>Scale</u>	<u>F-Score</u>	<u>Significance Level</u>
Scale 5	2.96	.06
Scale 6	3.52	.00
Scale 7	6.39	.00
Scale 8	6.35	.00
Scale 9	9.72	.00
Scale 10	.58	.56
N= 119		

The results of the MANOVA suggest that overall there was an effect for MMPI-A scales and cluster type. Only Scale 2, Scale 5 and Scale 10 failed to reach the .05 level of significance. To determine if there were further differences between MMPI-A scales and cluster type, post-hoc comparisons were conducted utilizing Bonferroni critical value to control for uneven pair-wise comparisons. One-way ANOVAs were run with the MMPI-A scales as dependent variables and personality cluster type as independent variables. Differences are illustrated in Table 9. The three groups are statistically distinct from one another on the F Scale, Scale 1 (Hypochondriasis), Scale 2 (Depression), Scale 6 (Paranoia), Scale 7 (Psychasthenia), and Scale 8 (Schizophrenia).

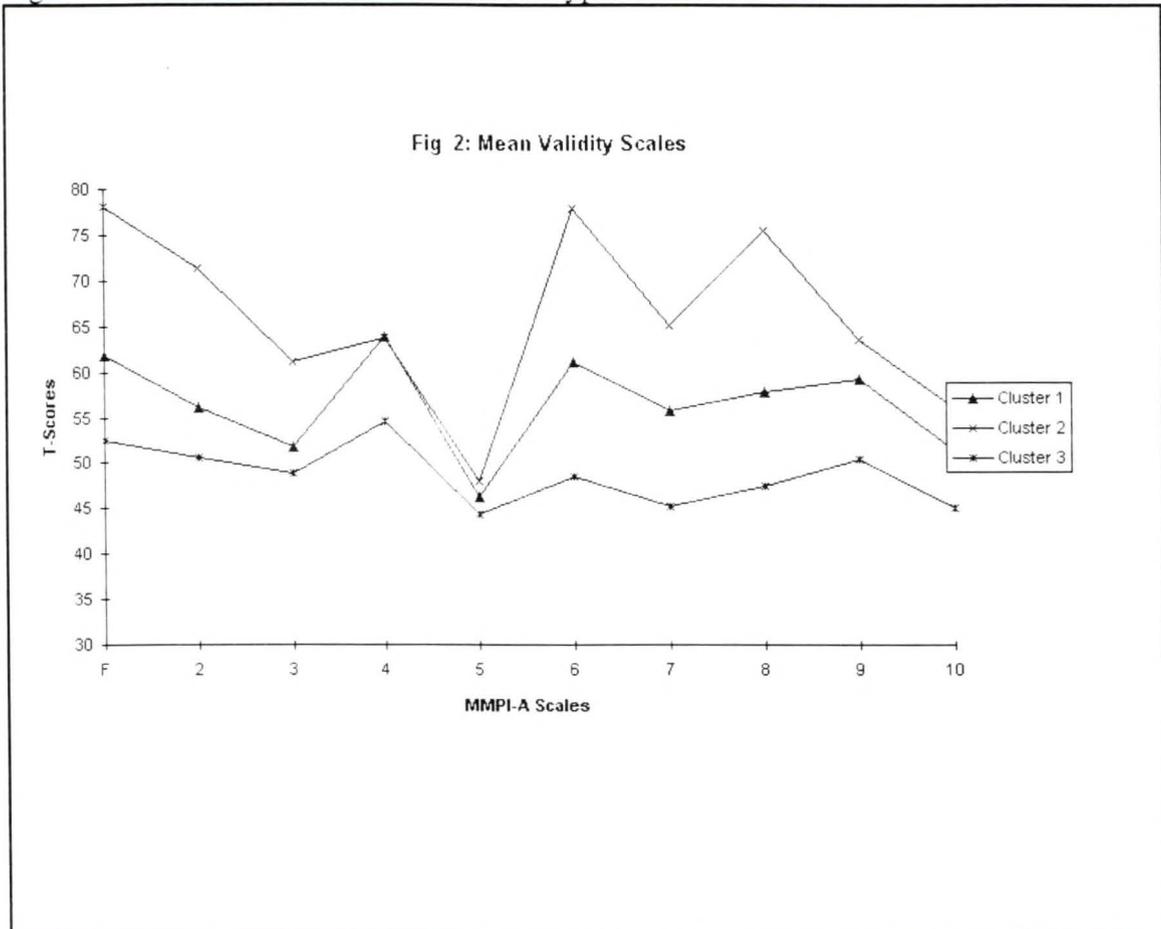
Table 9: Mean MMPI-A Scale T-scores for individual cluster types

	Cluster 1 (N= 58)	Cluster 2 (N= 25)	Cluster 3 (N= 36)
F Scale	M 61.91 <sup>b</sup> SD 8.61	M 78.07 <sup>c</sup> SD 8.68	M 52.52 <sup>a</sup> SD 6.30
Depression Scale 2	M 56.05 <sup>b</sup> SD 9.16	M 71.27 <sup>c</sup> SD 9.15	M 50.67 <sup>a</sup> SD 5.59
Hysteria Scale 3	M 51.73 <sup>a</sup> SD 9.61	M 61.07 <sup>b</sup> SD 7.80	M 48.93 <sup>a</sup> SD 7.44
Psychopathic Deviate Scale 4	M 63.86 <sup>b</sup> SD 8.56	M 63.73 <sup>b</sup> SD 13.27	M 54.59 <sup>a</sup> SD 8.48
Masculinity-Femininity Scale 5	M 46.22 SD 7.94	M 48.00 SD 6.40	M 44.33 SD 7.50
Paranoia Scale 6	M 61.13 <sup>b</sup> SD 10.11	M 78.00 <sup>c</sup> SD 12.35	M 48.59 <sup>a</sup> SD 5.49
Psychasthenia Scale 7	M 55.71 <sup>b</sup> SD 7.94	M 65.20 <sup>c</sup> SD 7.00	M 45.19 <sup>a</sup> SD 5.86
Schizophrenia Scale 8	M 57.82 <sup>b</sup> SD 8.42	M 75.47 <sup>c</sup> SD 10.56	M 47.48 <sup>a</sup> SD 7.92
Hypomania Scale 9	M 59.22 <sup>a</sup> SD 11.25	M 63.60 <sup>b</sup> SD 14.09	M 50.47 <sup>a</sup> SD 9.07
Social Introversion Scale 10	M 51.45 <sup>a</sup> SD 7.45	M 56.07 <sup>b</sup> SD 6.43	M 45.04 <sup>a</sup> SD 7.59
N = 119			

(Note: ) Different superscripts denote significance at the .05 level.

A further illustration of the cluster types is provided in Figure 2.

Figure 2: MMPI Scale Profile for Cluster Types



#### MANOVA and STAXI variables:

A MANOVA was conducted with selected variables of the STAXI as dependent variables and the three cluster types as independent variables.

The results are illustrated in Table 10.

Table 10: MANOVA and STAXI variables

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Variable	F -Ratio	Significance Level
State Anger	4.99	.01
Trait Anger	7.30	.00
Anger-In	2.20	.12
Anger-Out	2.36	.10
Anger Control	4.23	.02
Anger Expression	7.66	.00

---

The results indicate a significant effect for anger variables with the exception of Anger-In and Anger-Out.

Cluster Type and Dependent Variables:

To address the second hypothesis that the individual cluster types would be distinct on a number of affective and familial variables, a series of one-way ANOVAs were run with cluster type as an independent variable. The first one-way ANOVA was conducted with anger expression as a dependent variable and cluster type (3-Cluster Solution) as an independent variable. The results indicated that there was a statistically distinct difference between the personality cluster types and the amount of anger expression,  $[F(2, 96) = 7.65, p < .05]$ . Both Cluster Group 1 and 2 were significantly

elevated when compared to Group 3. However, Group 1 and 2 appear to not be significantly distinct from each other.

A one-way ANOVA was conducted with Trait Anger as a dependent variable and personality cluster type as an independent variable. The results appeared to show a relationship between the personality cluster types and Trait Anger,  $[F(2, 96) = 7.42, p < .05]$ . Groups 1 and 2 appear to be distinctly elevated compared to Group 3. However, Group 1 and 2 are not statistically distinct from each other in terms of elevation.

A one-way ANOVA was conducted with family control as a dependent variable and personality cluster type as an independent variable. The results suggested that there is not a strong relationship between the personality cluster types and differing perceived levels of family control,  $[F(2, 96) = .0911, p > .05]$ . The means for all three groups on family control were statistically similar.

A one-way ANOVA was conducted with Trait Anxiety as a dependent variable and personality cluster type was an independent variable. The resulting analysis suggests a strong relationship between the personality cluster type and the perception of anxiety,  $[F(2, 96) = 20.68, p < .05]$ . Group 1 and 2 are significantly elevated when compared to Group 3 in terms of anxiety. However, Group 1 and 2 are not elevated when compared to each other. The results to this analysis are provided in Table 11.

Table 11: Means for the Personality Cluster Types on Four Dependent Variables

	Cluster 1	Cluster 2	Cluster 3
Anger Expression	M 33.02 <sup>b</sup> SD 7.52	M 32.54 <sup>b</sup> SD 10.40	M 25.28 <sup>a</sup> SD 8.62
Trait Anger	M 23.92 <sup>b</sup> SD 5.31	M 23.85 <sup>b</sup> SD 7.08	M 18.72 <sup>a</sup> SD 5.81
Family Control	M 51.92 SD 10.30	M 52.08 SD 10.14	M 53.00 SD 10.97
Trait Anxiety	M 46.08 <sup>b</sup> SD 8.39	M 50.77 <sup>b</sup> SD 7.04	M 35.12 <sup>a</sup> SD 8.34

N = 99

(Note:) Different superscripts denote differences at the .05 level of significance.

#### Cluster Type and Anger Variables:

To fully investigate the relationship between anger expression and personality cluster type, separate one-way ANOVAs were run with Anger-In, Anger-Out and Anger Control as dependent variables. When Anger-In was entered as a dependent variable with personality cluster type as an independent variable, the resulting analysis was non-significant for the relationship between suppressing angry feelings and personality cluster type, [  $F(2, 96) = 2.13, p > .05$ ]. The means for all three groups were statistically similar.

A one-way ANOVA was conducted with Anger-Out as a dependent variable and personality cluster type as an independent variable. The resulting analysis was non-significant for the relationship between expressing angry feelings outwardly and personality cluster type, [ $F(2, 96) = 2.40, p > .05$ ].

Finally, a one-way ANOVA was conducted with Anger Control as a dependent variable and personality cluster type as an independent variable. The resulting analysis was significant for the relationship between Anger Control and personality cluster type, [ $F(2, 96) = 4.23, p < .05$ ]. Group 3 was statistically elevated compared to Group 1; however, Group 3 was statistically non-distinct compared to Group 2.

Table 12: Means for the Personality Cluster Types on Three Anger Variables

	Cluster 1	Cluster 2	Cluster 3
Anger-In	M 18.40 SD 3.86	M 17.92 SD 4.09	M 16.36 SD 4.51
Anger-Out	M 18.77 SD 3.86	M 18.77 SD 5.99	M 16.44 SD 4.93
Anger Control	M 20.27 <sup>a</sup> SD 4.21	M 20.15 <sup>a,b</sup> SD 4.34	M 23.52 <sup>b</sup> SD 5.93

(Note): Different superscripts denote significance at the .05 level

### Regression Analyses:

The third analysis was a series of independent linear regression equations with various measures of the STAXI as dependent variables and family cohesion and family conflict as independent variables.

When Trait Anger was entered as a dependent variable with family cohesion and family conflict as independent variables, the regression equation revealed a significant interaction for both independent variables. [  $F(2, 96) = 11.62, p < .05$  ]. Further analysis indicated that family cohesion had a negative, significant relationship with Trait Anger, [  $Beta = -.2313, t = -2.290, p < .05$  ]. Consequently, family conflict had a positive, significant relationship with Trait Anger [  $Beta = .3271, t = 3.24, p < .05$  ].

Anger-In was entered as a dependent variable with family cohesion and family conflict entered as independent variables. The resulting regression equation showed a non-significant relationship with either variable. [  $F(2, 96) = .17, p > .05$  ]. Further analysis demonstrated a negative, non-significant relationship with family cohesion as a independent variable and Anger-In as a dependent variable, [  $Beta = -.0475, t = -.419, p > .05$  ]. Additionally, family conflict displayed a positive, non-significant relationship with Anger-In as a dependent variable, [  $Beta = .0286, t = .252, p > .05$  ].

Anger-Out was entered as a dependent variable with family cohesion and family conflict as independent variables. The resulting regression equation showed a significant relationship with both independent variables contributing significantly, [  $F(2, 96) = 8.13, p < .05$ ]. Further analysis suggested that family conflict had a positive, significant relationship with Anger-Out [  $Beta = .2597, t = 2.49, p < .05$ ]. Further analysis also suggested a negative, significant relationship with Anger-Out and family cohesion [  $Beta = -.2258, t = -2.16, p < .05$ ].

Anger Control was entered as a dependent variable with family cohesion and family conflict as independent variables. The regression equation suggested a significant relationship with one of the independent variables contributing significantly, [  $F(2, 96) = 4.35, p < .05$ ]. Further analysis suggests that family conflict had a positive, non-significant relationship with the Anger Control, [  $Beta = .0505, t = .46, p > .05$ ]. Lastly, analysis revealed a positive, significant relationship with family cohesion and Anger Control, [  $Beta = .3158, t = 2.90, p < .05$ ].

Further, the sample was sorted on arrest history so that only those with a positive arrest history were analyzed. When Trait Anger was entered as a dependent variable and family cohesion and family conflict were entered as independent variables, the overall resulting relationship was significant, [  $F(2, 81) = 10.29, p < .05$ ]. Further analysis suggests that family conflict had a positive, significant relationship with Trait Anger,

[ Beta = .3007,  $t = 2.79$ ,  $p < .05$ ]. Family cohesion had a negative, significant relationship with Trait Anger, [ Beta =  $-.2767$ ,  $t = -2.563$ ,  $p < .05$ ].

A regression equation with Anger-In as a dependent variable and family cohesion and family conflict as independent variables suggested a non-significant relationship, [  $F(2, 81) = .0459$ ,  $p > .05$ ]. Examining the variables independently, family conflict had a positive, non-significant relationship with Anger-In, [ Beta =  $.1314$ ,  $t = .352$ ,  $p > .05$ ]. Family cohesion had a negative, non-significant relationship with Anger-In, [ Beta =  $-.0469$ ,  $t = -1.126$ ,  $p > .05$ ].

When Anger-Out was entered as a dependent variable and family conflict and family cohesion, the resulting regression equation suggested a significant relationship, [  $F(2, 81) = 7.11$ ,  $p < .05$ ]. Examining the variables independently, family conflict had a positive, significant relationship with Anger-Out, [ Beta =  $.2832$ ,  $t = 2.534$ ,  $p < .05$ ]. Family cohesion had a negative, non-significant relationship with Anger-Out; however, a trend was still indicated, [ Beta =  $-.2112$ ,  $t = -1.89$ ,  $p = .06$ ].

A regression equation was established with Anger Control as a dependent variable and family cohesion and family conflict as independent variables suggested a significant relationship, [  $F(2, 81) = 4.7123$ ,  $p < .05$ ]. Family conflict seemed to have a positive, non-significant relationship with Anger Control, [ Beta =  $.0535$ ,  $t = .463$ ,  $p > .05$ ]. Family

cohesion appeared to have a positive, significant relationship with Anger Control, [ Beta = .3503, t = 3.034, p < .05].

## CHAPTER 4 DISCUSSION

This study was conducted in order to better understand possible psychopathological personality patterns in adolescents at risk for violence. In addition, this study sought to better understand the possible relationships between affective variables, such as anger and anxiety, and familial components to these personality patterns in a select sample of adolescents at risk for violence. Demographic information collected on the present sample demonstrated that the majority of the sample was African-American with a previous arrest history. In addition, the majority of the sample either was raised in a single-family or other non-traditional family arrangements, such as biological parent and step-parent. For those children who lived with at least one biological parent, the vast majority of these parents were employed. Since the majority of the subjects in this study were African-American, the demographic information suggests a sampling bias of ethnicity on referrals to alternative schools and detention center referrals. The extent of this bias on test results is unknown; however, future research with similar populations may want to explore in more detail the effects of ethnicity and social class on paper-and-pencil psychological inventories.

For this study, there were a number of pertinent variables that were not examined. These variables include questions concerning substance abuse, gang membership, number of incidences of violence and adolescent parentage. These variables are important and need to be examined within the population of adolescents at risk for violence. Future studies of this population should examine the extent and scope of these variables with these children.

The child's place of residence was not examined in great detail within the current study. Those children who were not living with a least one biological parent were placed in an "Other" category. However, within this category there was a great deal of range. Children could be living with extended family members, such as aunts or grandparents, or be placed in foster-care placement. There was not sufficient numbers of children living in foster-care placement within this sample to conduct a statistical analysis. However, hypothetical differences between children who live in extended family situations and those in foster care placements on a number of affective and familial variables should be examined in a future study.

Within this study, a comparison was conducted between white subjects and African-American subjects on ten MMPI-A scales (F, 2, 3, 4, 5, 6, 7, 8, 9, 10). Significant differences were found between ethnicity and Scales 6, 7 and 8. Whites in the current sample were found to be higher on Scales 6 (Paranoia) and 7 (Psychasthenia) and African-Americans were found to be higher on Scale 8 (Schizophrenia). In addition, there was a statistical

trend in whites being higher on Scale 5 (Masculinity-Femininity) and African-Americans being higher on Scale 10 (Social Introversion). It can be hypothesized that the white sample elevations on paranoia and psychasthenia can be the result of coming from a majority culture and being placed in a situation where they are minorities (ie., detention centers or alternative schools). The elevation on Schizophrenia for African-Americans may be explained by subtle cultural differences in language and socialization. The current differences in MMPI-A scales for ethnic groups is speculative. This current study suggests that a more detailed analysis of ethnic differences in different subject populations needs to be conducted.

For the FES, t-tests were conducted between the sample means and the means of a normative sample. The analyses showed that compared to a normative sample, this sample was significantly lower on family cohesion and significantly higher on family conflict and control. This findings demonstrates dysfunctional family characteristics for the sample as a whole. This finding suggests a more detailed study into the family characteristics of adolescents at risk for violence utilizing more variables from the FES.

The first hypothesis stated that the overall sample of adolescents at risk for violence would be heterogeneous in terms of personality data gathered from the MMPI-A. This hypothesis was tested utilizing a

hierarchical, agglomerative cluster analysis (Centroid linkage method) with the following scales of the MMPI-A: F, 2, 3, 4, 5, 6, 7, 8, 9, 10. Distances between clusters were examined using squared Euclidean distances. A "stopping technique" formulated by Mojena (1977) and later by Mojena and Wishart (1980) indicated the presence of a three-cluster solution.

An examination of the three-cluster solution was conducted looking at the overall MMPI Validity and Clinical Scales. The results were interpreted based on the scores of a normative sample. Cluster 1 had no clinical elevations on any of the validity scales or the clinical scales compared to a normative sample. However, there were sub-clinical elevations on the F Scale, Scale 4 (Psychopathic Deviate), and Scale 6 (Paranoia). This is in direct contrast to Cluster 2. Cluster 2 had clinical elevations (scale elevation > 65) on the F Scale, Scale 2 (Depression), Scale 6 (Paranoia), Scale 7 (Psychasthenia), and Scale 8 (Schizophrenia). In addition, there were sub-clinical elevations on Scale 3 (Hysteria), Scale 4 (Psychopathic Deviate), and Scale 9 (Hypomania). Lastly, Group 3 had no clinical elevations on any validity or clinical scales of the MMPI-A. From examining the results of the means, it appears that the majority of the MMPI-A scales for Cluster 3 are near the central T-Score mean of 50.

Cluster 1 had elevated, yet sub-clinical, (> 60) T-scores on three Hathaway and Monachesi (1963) "excitatory" scales (F, 4, and 6). For the

purpose of discussion, they were termed the Sub-excitatory group. In contrast, Cluster 2 had elevated (>65) T-scores on three Hathaway and Monachesi "excitatory" scales (F, 6 and 8), as well as sub-clinical (>60) T-scores on two scales (4 and 9). Cluster 2 also had elevated T-scores on two "inhibitory" scales (2 and 7). They were termed the Mixed group. Finally, Cluster 3 had no clinical or sub-clinical elevations on any scale. They were termed the Non-elevated group. Based on the original model suggested by Hathaway and Monachesi, one would have expected an excitatory group to have higher T-scores and hypothesized the presence of a purely Inhibitory group. Since Hathaway and Monachesi (1963) and Williams and Butcher (1989) posited that excitatory scales would have a greater influence over inhibitory scales, one would predict that Cluster 2 would have high rates of acting-out. Since Group 1 had minor elevations on excitatory scales, one would predict higher rates of acting out than Group 3, which according to the model, would have low rates of acting out. Acting-out was not measured directly in this study by examining rates of violent behavior, although it was examined in-directly by looking at the self-report of anger styles. One would hypothesize that Group 1 and Group 2 would have higher Trait Anger (Hostility) and Anger-Out scores compared with Group 3.

In examining the available personality cluster types, the only one that clearly distinguishes itself is Cluster 2. See Figure 2 in the Results

Section. However, one-way ANOVAs were conducted to verify the separations of the three personality cluster types.

One limitation of the first analysis is the use of a cluster analysis. The majority of cluster analysis methods are heuristics which do not involve a great deal of statistical reasoning (Aldenderer & Blashfield, 1984). Different clustering techniques (Wards, Average Linkage, Single Linkage, Centroid, etc.) have been known to generate different solutions to the same data base (Aldenderer & Blashfield, 1984). While it is true that the Centroid linkage method generated a three-cluster solution, it may have been possible to generate a different result utilizing a different technique. Researchers should be aware of the bias that accompany the presentation and description of groups created by clustering techniques.

A number of one-way ANOVAs were conducted with a series of dependent variables (anger expression, trait anger, trait anxiety, and family control) and personality cluster type as the independent variable. The results indicated a significant relationship between anger expression and personality cluster type in which Cluster Groups 1 and 2 were substantially elevated compared to Group 3. However, the anger expression mean score was not statistically distinct for Group 1 and 2. The same result occurred with Trait Anger as a dependent variable and personality cluster type as an independent variable. Cluster Groups 1 and 2 were statistically elevated compared to Group 3, but not statistically elevated when compared to each

other. Trait Anxiety had a statistically significant relationship with personality cluster type and Groups 1 and 2 were statistically elevated when compared with Group 3. However, Groups 1 and 2 were not statistically distinct from each other. Lastly, Family Control did not demonstrate a statistically significant relationship with personality cluster type and upon visual inspection of their means, all three personality cluster groups were remarkably similar.

Theoretically, it is interesting that Group 1 and 2 were distinct on personality variables yet similar on affective variables (anger expression, trait anger, and trait anxiety). If compared to a normative sample, Group 1 and 2 would be at the 69th and 65th percentile for anger expression. One would expect that the personality cluster group with the highest and greatest number of clinical elevations to have the highest anger expression score. However, for this study this is not the case.

Hypothetically, this could be explained in that the behavioral manifestations of anger expression may be different for the two groups.

This would mean that Group 1 may have more socially acceptable outlets for their anger than Group 2. This hypothesis could be developed further by examining the groups in terms of a structured interview designed to gather information about ways individuals react to situations when angry or upset. Gathering behavioral information (such as voice characteristics, speech patterns or eye contact) from each group could contribute more information

about possible distinct manifestations for groups with high levels of anger expression.

Group 3 was relatively similar to Group 1 in terms of personality presentation but distinct when it came to anger expression. Group 3 was low on the majority of measures but had a degree of defensiveness as measured by Scale K. It could be that the low anger expression scores could be the result of defensiveness. Again additional information, such as information provided in an interview would be able to examine if this hypothesis is valid. The interview could tease out information about verbal style or reactions to angry situations. Another possibility is that Group 3 is indeed low on anger expression and that other factors present in a given child's environment (poverty, poor role models, etc.) placed the child in an unfortunate situation where they came to the attention of legal authorities.

Trait Anger was entered as a dependent variable and found to have a significant relationship with the personality cluster types. Groups 1 and 2 were distinct from Group 3 but not dissimilar from each other. Trait Anger is espoused to be a measure of hostility (sustained angry feelings over a substantial period of time). Hypothetically, it would be interesting if Group 1 and Group 2 differ in their presentations of hostility. Specifically, does one group deal with angry feelings in differing, more socially appropriate ways than the other. Questions arise as to why one

group that readily reveals psychological distress and no group in no particular distress have the same level of affective responding to paper and pencil inventories. If this question is asked then the other question would be that how can two groups so similar in terms of personality variables have such different levels of affective responding.

To examine the relationship more fully between anger, hostility and personality cluster type, more analyses were conducted with Anger-In, Anger-Out and Anger Control. Anger-In was examined to test the Suppressed Anger Type hypothesis. Analyses were conducted with Anger-Out to test the Uncontrolled Anger Type hypothesis. Finally, Anger Control was entered to test the Overcontrolled Anger Type. Both Anger-In and Anger-Out proved to be non-significant which was surprising given the differences in Trait Anger and Anger Expression. Anger Control proved to be significantly higher for Group 3 than for Group 1 or 2. This leads to a theory of Group 3 being an Overcontrolled Anger type. Group 3 was found to be a more defensive group than Group 1 or 2 just based on defensiveness (Scale K of the MMPI). For this theory to be substantiated more, one would expect Group 3 to have higher Anger Expression scores than it demonstrated. Also, one would have to get behavioral samples for each of the three groups to test out theories of Overcontrolled, Uncontrolled and Suppressed Anger Types. One might also want to get bio-behavioral information as well as observer reliability before confirming the hypothesis.

Familial levels of control were not found to be distinct among any of the three personality cluster groups. The lack of variability suggests that all three groups perceive the same levels of control. The familial component of control seems to have little relationship to differing levels of personality presentation. This result is unexpected given the results of the Veneziano and Veneziano (1992) study which concluded that most of the children they tested grew up in households high in control. This study failed to find the same high levels of control within our sample. The sample in this study appeared to have relatively consistent levels of control which were not easily distinguishable from each other. One explanation for the different findings could be subtle sample differences between this sample and the sample of the Veneziano and Veneziano (1992) study.

Anxiety appeared to have a statistically significant relationship with personality cluster type. Groups 1 and 2 had distinct elevations in long-standing anxious feelings than Group 3. Coupled with the information already gathered from anger expression and trait anger, the findings would suggest that Groups 1 and 2 are affectively reactive and the nature of this reactivity is long-standing.

Hathaway and Monachesi termed the "inhibitory" scales the neurotic scales and predicted that if a child was elevated on anxiety dimensions, the rates of acting-out would be lower. However, this study contradicts that finding in that there are high levels of anxiety and anger for both groups.

This suggests a more complex relationship between anxiety, anger and acting-out than anxiety being inhibitory and anger meaning expressive. The results of this study suggest that both contribute to acting-out behavior. More research needs to be conducted in this area to verify this finding.

One can postulate about the long-term nature of this reactivity in terms of interpersonal relationships or the health of these children. As a result of this reactivity would Groups 1 and 2 have a differing course than Group 3. It would be interesting to undergo a longitudinal study to examine if indeed those adolescents who indicated long-standing difficulty with emotional reactivity had a differing course than those adolescents who did not indicate such difficulties. This would contribute to the general body of knowledge concerning the relationship between personality variables, emotional reactivity and overall health.

Groups 1 and 2 are distinct on personality variables but not distinct at all on certain affective variables. Group 1 and 3 are not extremely distinct on personality variables but are extremely distinct on affective variables. A conservative view would be that personality variables only contribute to understanding a sub-group of this population but not the majority of the population as a whole. Affective variables, particularly those of a long-standing reactive nature, appear to add more to the nature of understanding these children.

The final analyses were a series of independent, linear regression equations which sought to examine relationships between anger and familial variables. Trait Anger was found to have a negative, significant relationship with family cohesion. Consequently, Trait Anger had a positive, significant relationship with family conflict. The variable of Trait Anger is said to be a reflection of Hostility (frequent experiences of anger), so that as the variable of family cohesion decreases, the experiences of anger increases. This result is not surprising in light of the Veneziano and Veneziano (1992) study. One would suggest that good family cohesion would somehow be a buffer to anger. Additionally, low amounts of family cohesion could increase feelings of alienation or inferiority which could indirectly heighten expressions of anger. This is demonstrated further by family conflict having a positive relationship with Trait Anger. Conceptually, high amounts of family conflict suggest a family situation in which at least one member engages in frequent displays of anger and/ or arguing, which could influence a child by simply modeling these behaviors. The converse of family cohesion would be in effect here where high amounts of family conflict influence frequent experiences of anger. This finding suggests that a good family bond with average amounts of conflict have an effect on lowering the experiences of anger.

Anger-Out (the outward expression of anger) was found to have a negative, significant relationship with family cohesion and a positive,

significant relationship with family conflict. This finding reflects the previous finding of a relationship between Trait Anger and family conflict and cohesion. High amounts of family conflict increase the self-report of anger outwardness. This result may reflect a modeling relationship in which the child views a parent or guardian frequently engage in outward displays of anger expressiveness and then follows the same pattern. The opposite would be true of family cohesion in which a good, perceived bond would moderate the display of anger. Regression results of the relationship between Anger-Out and Trait Anger with family components of conflict and cohesion have important treatment implications for ways to lower hostility and outward displays of anger.

Anger Control also had a positive, significant relationship with the variable of family cohesion. This relationship supports the notion of family bondedness as a moderator of anger displays. The higher the perceived feelings of family connectiveness the higher the feeling of frequent emotional control. This may appear to be a positive result at first. However, intense investment of energy in monitoring and preventing the expression of anger may result in passivity or depression (Spielberger, 1988). We do not know the nature of the relationship between Trait Anger and Anger Control for this population. Frequent instances of Anger Control possibly coupled with Hostility according to Hecker and Lunde (1985) would suggest the presence of the Overcontrolled Anger type. The evidence is

still tentative if the Overcontrolled Anger type was present in the sample; however, a possible treatment option may be to encourage the healthy display of anger to populations who believe that they must over-exert control of emotional expression.

There did not appear to be much of a relationship between perceived levels of conflict and frequent attempts to control emotional expression. In light of the previous finding of a relationship between family conflict and overt emotional expression, the non-significance of this result appears to make sense. The relationship appears to be that family cohesion appears to moderate emotional expression while family conflict appears to escalate the expression of emotion.

There did not appear to be much of a relationship between Anger-In and the variables of family cohesion and family conflict within this study. Anger-In is the suppression of angry feeling for fear that one does not know what to do with these feelings. It may be that this study did not investigate this variable fully within this population. More, comprehensive research should be conducted to test whether the Suppressed Anger type is a viable theory within an adolescent sample.

Due to the relatively low numbers of subjects without an arrest history, the sample was sorted on arrest history so that only those who indicated having a positive arrest history were analyzed. Those with an arrest history were examined because of a theoretical postulation that

those with an arrest history would have a tendency to act out more and support the Uncontrolled Anger type theory of Hecker and Lunde (1985). However, the resulting relationships all maintained their significance and direction. Again, family cohesion had a positive relationship with family cohesion suggesting the link between perceived strong family bonds and emotional control. These findings appear to have strong treatment implications for adolescents at risk for aggression, especially those with an arrest history.

Overall, the findings do confirm previous theoretical models that adolescents at risk for aggression are a heterogeneous group in terms of personality and affective presentations. However, the variables of personality for this population did not appear to be as strong as was indicated by previous experimenters (Hathaway and Monachesi, 1963; Williams and Butcher, 1989). There was only a minority of subjects who had extreme clinical elevations with most subjects only having a few clinical elevations or no clinical elevations. This finding may reflect differences between the original MMPI and the MMPI-A. The original MMPI was found to have numerous criticisms including the test being too long, the adolescent norms being outdated, and the reading level may have been too high (Archer, 1984, 1987; Williams and Butcher, 1989a, 1989b). However for the majority of children in this sample that they could comprehend and respond to a lengthy test protocol and respond in appropriate fashion. This is important

for designing treatment options for this population. The majority of these adolescents may be suitable for a treatment program that is straightforward (at least comprehensible at the 6th grade level) and relatively structured.

The findings tentatively suggest the presence of the Uncontrolled and Overcontrolled Anger type as postulated by Hecker and Lunde (1985). However, a limitation of this current study is that only self-report information was used. Further investigations of these Anger types should include interview information and bio-behavioral measures to verify utilizing more objective measures the theory of hostility in a population of adolescents at risk for aggression. However, there was not sufficient information to suggest the presence of a Suppressed Anger type. Whether this type can be verified in this population remains to be seen.

The findings as related to affective reactivity suggested that these adolescents were heterogeneous for emotional presentation as well. There was evidence of high levels of hostility (Trait Anger) as well as evidence of overt emotional expression or stringent monitoring and control of emotional expression. Future research may want to fully examine the role of emotional reactivity in other behavioral areas such as substance abuse, unprotected sex, thrill-seeking behavior, suicidality or homicidality.

The findings of this study suggest a treatment model for emotional reactivity in adolescents at risk for aggression and violence. Since

emotional reactivity was found to be a salient variable within this population, methods to reduce the biological manifestations of emotional reactivity for this group need to be studied. Hypothetically, one could study or compare various anxiety and anger reduction methods, such as progressive muscle relaxation or medication. Other suggestions for treatment include devising methods of treating elements of dysfunctional family patterns within this population. A treatment model could be systematically constructed based on the results of this study. An examination of the current literature on available treatment methods needs to be conducted before a treatment model is conceptualized.

Overall, this study suggested that there were differential levels of anger expression, trait anger and trait anxiety for this population. Whether or not these affective variables can be treated within a model remains to be seen. Additionally, it is not known whether the behavior of these adolescents can be corrected by addressing affective and familial elements. However, we do know that the rates of adolescents acting out and being violent is increasing and has been increasing with each subsequent measurement. A treatment model based on good working hypotheses that can be evaluated in a component fashion to determine what is effective and what is ineffective is needed. It is the hope of this study that these treatment implications can be tested and evaluated and more effective treatment programs for aggression among adolescents can be found.

APPENDIX  
DEMOGRAPHIC QUESTIONNAIRE

Please do not put your name on this form because we want to insure that your answers are completely anonymous. The information you provide on this form will be strictly confidential and will not be used against you in any way. A number will be assigned to you so that feedback on other test results can be provided.

**Assigned number:** \_\_\_\_\_

- 1) What is your age? \_\_\_\_\_
- 2) What is your current grade in school? \_\_\_\_\_
- 3) What is your ethnic affiliation?  
A) African- American B) Latino C) White D) American Indian E) Other
- 4) Describe your current family?  
A) Both parents B) Mother and Stepfather C) Father and Stepmother  
D) Mother only E) Father only F) Other-- Please explain below.

- 
- 5) What is your parent(s) employment status?  
A) Employed B) Unemployed
  - 6) Please indicate whether or not you have an arrest history?  
A) Yes B) No

## REFERENCES

- Aldenderfer, M. S. and Blashfield, R. K. (1984). Clusteranalysis. Beverly Hills, CA: Sage Publications
- Alexander, J. (1973). Defensive and supportive communication in normal and deviant families. Journal of Consulting and Clinical Psychology, 40, 223- 231.
- American Psychiatric Association. (1987). Diagnostic and statistical manual of mental disorders (3rd ed., rev.) Washington: Author.
- American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.) Washington: Author.
- Archer, R. P. (1984). Use of the MMPI with adolescents: A review of salient issues. Clinical Psychology Review, 4, 241- 251.
- Archer, R. P. (1987). Using the MMPI with adolescents. Hillsdale, NJ: Erlbaum.
- Archer, R. P. (1992). Assessing adolescent psychopathology. Hillsdale, NJ: Erlbaum.
- Bahr, S. (1979). Family determinants and effects of deviance. In Burr, W., Hill, R., Nye, F. and Reiss, I. (eds.), Contemporary theories about the family: research- based theories (Vol. 1). Free Press, New York.
- Baldus, B. & Tribe, V. (1978). The development of perceptions and evaluations of social inequality among public school children. Canadian Review of Sociology and Anthropology, 15, 50- 60.
- Bandura, A. (1973). Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice- Hall.
- Brook, J. S., Brook, D. W., Gordon, A. S., Whiteman, M., & Cohen, P. (1990). The psychosocial etiology of adolescent drug use: A family interactional approach. Genetic, Social, and General Psychology Monographs, 116, 111- 267.
- Centers for Disease Control. (1991). Application of principles of community intervention. Public Health Reports, 106 (3), 244- 247.

- Colligan, R. C., & Offord, K. P. (1989). The aging MMPI: Contemporary norms for contemporary teenagers. Mayo Clinic Proceedings, 64, 3- 27.
- Coombs, R., & Landsverk, J. (1988). Parenting styles and substance use during childhood and adolescence. Journal of Marriage and Family, 50, 473- 482.
- Dembo, R., Grandon, G., LaVoie, L., Schneidler, J., & Burgos, W. (1986). Parents and drugs revisited: Some evidence in support of social learning theory. Criminology, 24, 85- 104.
- Dembo, R., Williams, L., Getreu, A., Genung, L., Schneidler, J., Berry, E., Wish, E., & LaVoie, L. (1991). A longitudinal study of the relationships among marijuana/ hashish use, cocaine use, and delinquency in a cohort of high risk youths. Journal of Drug Issues, 21, 271, 312.
- Dryfoos, J. G. (1990). Adolescents at risk. Oxford: Oxford University Press.
- Faunce, E., & Riskin, J. (1970). Family interaction scales II. Data analysis and findings. Archives of General Psychiatry, 22, 531- 526.
- Ginzberg, E., Berliner, H., & Ostow, M. (1988). Young people at risk: Is prevention possible?. Boulder, CO: Westview Press.
- Glick, B., & Goldstein, A. P. (1987). Aggression replacement training. Journal of Counseling and Development, 65, 356- 362.
- Hathaway, S. R. & Monachesi, E. D. (1963). Adolescent personality and behavior: MMPI patterns of normal, delinquent, dropout, and other outcomes. Minnesota: The University of Minnesota Press.
- Hawkins, J., & Weiss, J. (1985). The social development model: An integrated approach to delinquency prevention. Journal of Primary Prevention, 6, 73- 97.
- Hecker, M. H., & Lunde, D. T. (1985). On the diagnosis and treatment of chronically hostile individuals. In M. A. Chasrey & R. H. Rosenman. Anger and hostility in cardiovascular and behavioral disorder [pp. 227- 240]. New York and Hemisphere/ McGraw- Hill.

- Hindelang, M. J. (1981). Variations in sex-race-age-specific incidence rates of offending. American Sociological Review, 46, 461- 474.
- Hoffman, J. P. (1993). Exploring the direct and indirect family effects on adolescent drug use. The Journal of Drug Issues, 23 (3), 535- 557.
- Huesmann, L. R., Lefkowitz, M. M., & Efron, L. D. (1978). Sum of MMPI Scales F. 4, and 9 as a measure of aggression. Journal of Consulting and Clinical Psychology, 46, 1071- 1078.
- Jessor, R., & Jessor, R. (1977). Problem behavior and psychosocial development: A longitudinal study of youth. New York: Academic Press.
- Kazdin, A. E. (1992). In MMPI- A Content Scales: Assessing psychopathology in adolescents. ed. by Williams, C. E. (Foreword). Minnesota: University of Minnesota Press.
- Klimidis, S., Minas, I. H., & Ata, A. W. (1992). The PBI- BC: A brief current form of the parental bonding instrument for adolescent research. Comprehensive Psychiatry, 33 (6), 374-377.
- Klimidis, S., Minas, I. H., & Ata, A. W. (1992). Construct validation in adolescents of the brief current form of the parental bonding instrument. Comprehensive Psychiatry, 33 (6), 378- 383.
- Johnson, B., Wish, E., & Schneidler, J. (1991). Concentration of delinquent offending: Serious drug involvement and high delinquency rates. Journal of Drug Issues, 21, 205- 229.
- Johnson, E. H. (1990). The deadly emotions. New York: Praeger.
- Johnson, E. H., & Greene, A. F. (1992). The interview method for assessing anger: Development and validation. In E. H. Johnson, W. D. Gentry, & S. Julius (Eds.). Personality, elevated blood pressure, and essential hypertension [pp. 25- 66]. Washington D. C./ Hemisphere Publishing Corporation.
- Lewis, D., Lovely, R., Yeager, C., & dellaFemina, D. (1989). Towards a theory of the genesis of violence: A follow- up study of delinquency. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 431- 436.

- Loeber, P., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. In M. Tonry & N. Morris (Eds.). Crime and justice: An annual review of research (Vol. 7) [pp. 29- 150]. Chicago: University of Chicago Press.
- Marks, P. A., Seeman, W., & Haller, D. L. (1974). The actuarial use of the MMPI with adolescents and adults. Baltimore, MD: Williams & Wilkins.
- McCann, R. V. (1957). Delinquency: Sickness or sin?. New York: Harper & Brothers Publishers.
- McCord, W., & McCord, J. (1959). Origins of crime: A new evaluation of the Cambridge- Somerville youth study. New York: Columbia University Press.
- Megargee, E. I. (1966). Undercontrolled and overcontrolled personality types in extreme antisocial aggression. Psychological Monographs, 80, (3), 611.
- Megargee, E. I. (1982). Psychological correlates and determinants of criminal violence. In M. E. Wolfgang & N. Weiner (Eds.) Criminal violence. Beverly Hills, CA: Sage.
- Mojena, R. (1977). Hierarchical grouping methods and stopping rules- an evaluation. Computer Journal, (20), 359- 363.
- Mojena, R. & Wishart, R. (1980). Stopping rules for Ward's clustering method. Computer Statistics, (3), 426- 432.
- Moos, R. & Moos, B. (1994). Family Environment Scale Manual. Palo Alto, CA: Consulting Psychologists Press.
- Novaco, R. (1975). Anger control: The development and evaluation of an experimental treatment. Lexington, MA: DC Health/ Lexington Books.
- Novaco, R. (1985). In M. A. Chesney & R. H. Rosenman. Anger and hostility in cardiovascular and behavioral disorder. New York and Hemisphere/ McGraw- Hill.
- Olson, D. H., Portner, J., & Lavee, Y. (1985). Family Adaptability and Cohesion Evaluation Scales (FACES- III). St. Paul, MN: Family Social Science/ University of Minnesota.

- Palmo, A. J., & Palmo, L. A. (1993). The harmful effects of dysfunctional family dynamics. In D. Capuzzi & D. R. Gross. Youth at risk: A resource for counselors, teachers and parents [pp. 43- 69]. Alexandria, VA: American Counseling Association.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. British Journal of Medical Psychology, 52, 1- 10.
- Patterson, G. (1982). Family coercive processes. Eugene, OR: Castalia Publishing Co.
- Quay, H. C. (1987). ed. Handbook of juvenile delinquency. New York: John Wiley & Sons.
- Roberts, G. T. (1987). In Handbook of juvenile delinquency. ed. by Quay, H. C. New York: John Wiley & Sons.
- Seigel, M. (1984). Economic deprivation and the quality of parent-child interactions: A trickle-down framework. Journal of Applied Developmental Psychology, 5, 127- 144.
- Singer, M. (1974). Delinquency and family disciplinary configuration. Archives of General Psychiatry, 21, 795- 798.
- Spielberger, C. D. (1983). State- Trait Anxiety Inventory (STAI) Manual. Consulting Psychologists Press, Inc.
- Spielberger, C. D. (1988). State- Trait Anger Expression Inventory (STAXI) Manual. Psychological Assessment Resources, Inc.
- Spielberger, C. D., Johnson, E. H., Russell, S. F., Crane, R. S., & Wooden, T. J. (1985). The experience and expression of anger: Construction and validation of an anger expression scale. In M. A. Chasrey & R. H. Rosenman Anger and hostility in cardiovascular and behavioral disorder [pp. 5- 30]. New York: Hemisphere/ McGraw- Hill.
- Spivack, G., Platt, J. J., & Shure, M. B. (1976). The problem- solving approach to adjustment. San Francisco: Jossey- Bass.
- Vedder, C. B. (1954). The youthful offender: Perspective and readings. New York: Random House.
- Veneziano, C., & Veneziano, L. (1992). A typology of family social environments for institutionalized juvenile delinquents:

- Implications for research and treatment. Journal of Youth and Adolescence, 21 (5), 593- 607.
- Weaver, G. M., & Wootton, R. R. (1992). The use of the MMPI special scales in the assessment of delinquent personality. Adolescence, 27 (107), 545- 554.
- West, D. & Farrington, D. (1973). Who becomes delinquent? London: Heinemann Educational.
- Williams, C. L. (1986). MMPI profiles from adolescents: Interpretive strategies and treatment considerations. Journal of Child and Adolescent Psychology, 3, 179- 193.
- Williams, C. L., & Butcher, J. N. (1989a). An MMPI Study of adolescents: I. Empirical validity of the standard scales. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1 (4), 251- 259.
- Williams, C. L., & Butcher, J. N. (1989b). An MMPI Study of Adolescents: II. Verification and limitations of code type classifications. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1 (4), 260- 265.
- Wilson, H. (1980). Parental supervision: A neglected aspect of delinquency. British Journal of Criminology, 20, 203- 235.
- Winters, K. C., Weller, C. L., & Meland, J. A. (1993). Extent of drug abuse among juvenile offenders. The Journal of Drug Issues, 23 (3), 515- 524.
- Zillman, D. (1983). Arousal and aggression. In R. G. Geen & E. I. Donnerstein (Eds.) Aggression: Theoretical and empirical reviews (Vol. 1). New York: Academic.

## BIOGRAPHICAL SKETCH

Charlton James Coles was born in upstate New York on January 8, 1968. He was the third child of Cleo and Marian Coles. He grew up in the suburbs of Atlanta, GA. He attended high school at Benjamin E. Mays High School and graduated on June of 1986. After high school he attended the University of Georgia for one academic year. From there he transferred credit hours to Georgia State University in 1987 and graduated with a bachelor's degree in psychology in 1989. He enrolled in the clinical and health psychology doctoral program in 1990 and received a Master of Science degree in 1993. From September of 1995 to August of 1996, he was enrolled at an internship program in clinical psychology. He completed internship requirements on August 31, 1996. After completing his Doctor of Philosophy, Charlton is planning on continuing a postdoctoral fellowship at the Morehouse School of Medicine and working on professional licensure requirements.

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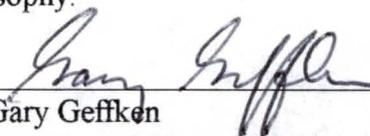
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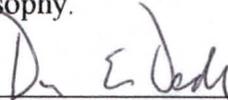
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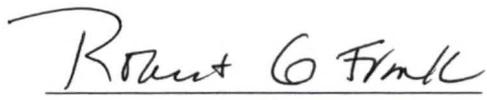
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