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I am submitting herewith a dissertation written by Rosine LaWanda Christmas entitled "An Empirical Examination of Reactive and Proactive Aggression Subtypes among Juvenile Delinquents." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.


Dr. Leonard Handler, Major Professor

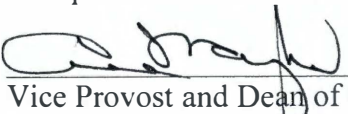
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Acceptance for the Council:


Vice Provost and Dean of Graduate
Studies

AN EMPIRICAL EXAMINATION OF REACTIVE AND PROACTIVE
AGGRESSION SUBTYPES AMONG JUVENILE DELINQUENTS

A Dissertation
Presented for the
Doctor of Philosophy
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DEDICATION

To my wonderful nephew, Dorian, who I love dearly:

I hope my accomplishments will inspire
And help you to follow your vision.
Dreams can and do come true.

To my family, educators, and friends:

Without your encouragement and support,
I would have found it hard to believe in myself.
Because of you, I am able to be me.

Thank God Almighty.

ABSTRACT

This study is an archival examination of psychological differences among court-referred delinquent youth. There were 80 participants, with 56 males and 24 females between 13 and 17 years old. By using Ward's hierarchical cluster analysis, juvenile offenders were grouped into four predetermined clusters of reactive and proactive aggression based on high and low scores obtained on scales measuring Internalization and Externalization dimensions from the Child Behavior Checklist Youth Self-Report (CBCL-YSR) and the Millon Adolescent Clinical Inventory (MACI).

Scales from the YSR and MACI, which were not used in forming the four clusters, along with the Stress Index for Parents of Adolescents (SIPA), the Rorschach (Exner Comprehensive System and Urist Mutuality of Autonomy Scales) and demographic information obtained from the youth's medical record (e.g., number of arrests, diagnosis, chemical dependency, type of crime) were used in Multivariate Analysis of Covariance (MANCOVA) and Binary Logistic Regression Analyses to explore the mean difference scores between juvenile delinquents clustered into groups labeled "Healthier" Delinquent Youth (HDY), High-Proactive Aggression (H-PA), Neurotic Delinquent Youth (NDY), and High-Reactive Aggression (H-RA).

This study was completed in order to provide a more comprehensive examination, including comparisons of objective and projective measures combined with medical records among a juvenile offending population. When examining psychological and behavioral levels of functioning among these delinquents, the H-RA group was more globally impaired than the HDY group. The H-PA group obtained lower scores than the

NDY group on some scales of internalization (i.e., Anxious-Depressed, Devaluation, Sum Texture, Food), but not all scales designed to measure internal distress (i.e., Withdrawn). There were no statistically significant differences found between male and female offenders. Further, cluster membership was unable to predict the type of crimes (i.e., violent vs. nonviolent) committed by youth, while membership in the HDY group was predictive of more arrests.

Suggestions are offered for future research on reactive and proactive aggression. Longitudinal studies to include more female participants and serious offenders with follow-up analyses of educational/goal achievements, number of arrests, employment status, and marital status/satisfaction may prove beneficial in providing a full range of mental health care services for youth who seek treatment.

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CHAPTER I INTRODUCTION

I. STATEMENT OF THE PROBLEM

Traditionally, aggression has been viewed as a simple unitary and undiscriminating construct (Brown & Parsons, 1998). However, over the past two decades there has been an increase of interest in two distinct aggressive subtypes among peers, namely reactive (i.e., interpersonal) and proactive aggression (i.e., bullying, instrumental) (Kindelberger & Mallet, 2000). Researchers use various definitions to describe each of these constructs, some of which are less clear than are others. Based on a review of the literature, compiled definitions may offer a more comprehensive explanation of what is actually being measured. Although to some extent acceptable during early childhood, proactive and reactive aggression may prove more problematic when exhibited during adolescence, and increase one's chances of maladjustment and poor behavioral outcomes in adulthood.

Although the literature in relation to the study of aggression subtypes has addressed several key issues, previous procedures in the study of reactive and proactive aggression have customarily only included direct observations of dyadic play groups, vignettes, teacher reports, and sociometric interviews based on student reports. Moreover, empirical findings have mostly been based upon correlational studies that address the impact of these subtypes of aggression. While explication of the recurring topics will be offered later, the issues addressed within the literature are as follows:

1. Differences found in peer status for proactive and reactive aggression.
2. Differences found in social adjustment for proactive and reactive aggression.

3. Hostile attributional bias among reactive aggressive individuals.
4. Outcome expectancy differences for proactive and reactive individuals.
5. The coexistence of reactive and proactive aggression.

The purpose of the present study is to complete a more comprehensive examination of reactive and proactive aggression among a delinquent adolescent population, combining objective and projective measures in an investigation of the psychological disposition of these youthful offenders. In addition, the intent of this study is to use demographic data obtained from participants' medical records to predict behavioral outcomes and diagnostic impressions as a function of group membership.

This study will be the first examination of reactive and proactive aggression subtypes using the Rorschach (Exner Comprehensive System and Urist Mutuality of Autonomy Scales) with delinquent youths. The Rorschach is additive to the existing research because it is not based on self-report, peer report, or reports from parents. As a projective measure, this psychological instrument will attempt to assess the unconscious internal processes of delinquent youths, expanding upon information obtained from other sources of data.

A comprehensive assessment of aggression subtypes is needed in order to grasp the complex nature of the constructs. With this in mind, it is believed that an array of psychological measurements and records combined may prove most efficacious in facilitating the ability to understand, prevent, and effectively intervene with specialized treatment for delinquent offenders.

Because of a surprising rise in juvenile delinquency, the study of reactive and proactive aggression among this population appears essential, as the problems arising in

communities are tremendous and at times difficult to manage. Moore and Tonry (1999) studied publication trends of articles published that were related to aggressive youth. They found that violence committed by and against youth rose sharply during the 1980's and early 1990's. This "epidemic of youth violence" is perhaps a contextual fact affecting research topics and populations of interest. The increase has come during a period when there are more youths and the existing youths are offending and being victimized more than other cohorts. While violence has remained concentrated among young African-American males, the degree has lessened and has become more prevalent among other groups of people (Moore & Tonry, 1999).

A review of published articles on aggression yielded noteworthy findings. Table A-1 shows 24.2 percent of the studies examined "minority only" groups, while 6.1 percent examined "white only" groups. In addition, "male only" groups comprised 54.5 percent of the studies; "male and female combined" groups comprised 40.9 percent; there were no "female only" groups; and 5.6 percent of the studies failed to mention the gender of their participants. [Note: All tables are located in the Appendix.]

Hudley and Friday (1996) offer an explanation of such significant demographical differences by stating that minority boys are selected to participate in studies on aggression because they are more likely to experience devastating events as both victims and perpetrators of excessive levels of aggression. Furthermore, although societal violence and the completion of research on aggression appear related, Table A-1 shows only 22.7 percent of the studies examined delinquents (adults= 13.6% and youth=9.1%). Lastly, Table A-2 shows over one-fourth (27.3%) of the publications on proactive and reactive aggression were published in a two-year period between 1996 and 1998.

The patterns found in the study of aggression subtypes are important in guiding the development of future research. Trends are informative and reveal advancements as well as omissions in the field, leading future researchers to uncover new territory. Based on the overview of the literature, the need to include more delinquent youths and females in the study of reactive and proactive aggression appear relevant. Therefore, this study will examine a combined group of youths who are male and female juvenile offenders.

CHAPTER II LITERATURE REVIEW

I. REACTIVE AND PROACTIVE AGGRESSION

A. SUBTYPES DEFINED

Subtypes of aggressive behavior have been identified in hopes of better understanding the etiology, treatment, and prognosis of aggression (Vitaro, Gendreau, Tremblay, & Oligny, 1998). Day, Bream, and Pal (1992) state that interventions might be more guided by subtypes developed on the basis of aggressive behavior. With these opinions in mind and the desire to produce generalizable findings, reactive and proactive aggression have been identified as separate constructs in need of investigation.

Reactive aggression is chiefly described as an explosive, unmediated (Brown & Parsons, 1998) retaliatory response (Dodge, Price, Bachorowski, & Newman, 1990). It occurs when individuals are unable to control their tempers when teased or provoked by peers. These people have the tendency to misattribute peers' intent as hostile to the self, leading to the perception of threat, anger, and distress (Day, Bream, & Pal, 1992; Dodge, Price, Bachorowski, & Newman, 1990; Coie, Dodge, Terry, & Wright, 1991; Poulin, Cillessen, Hubbard, Coie, & Schwartz, 1997). Likewise, reactive aggressive individuals view themselves as victims who are simply protecting the "self" (Coie, Dodge, Terry, & Wright, 1991).

Reactive aggressive individuals may act hastily with inappropriate judgment concerning the intent of others (Brown & Parsons, 1998) and the response may be out of

proportion (Smithymer, Hubbard, & Simmons, 2000). Also, this less controlled outburst of anger is a defensive reaction to goal blocking, provocation, or frustration (Dodge & Coie, 1987), and is not purposeful in obtaining desired goals (Yoon, Hughes, Cavell, & Thompson, 2000). Similarly, Coie, Dodge, Terry, & Wright (1991) state that reactive aggressors escalate their aggression in a preponderance of episodes, extending the interaction of sequences.

In contrast, proactive aggressive behaviors occur for reasons other than provocation (Cornell et al., 1996). This subtype of aggression is accompanied by a lack of emotion (Dodge & Coie, 1987), and does not usually include the escalation of aggressive acts during an episode (Coie, Dodge, Terry, & Wright, 1991). Proactive aggression serves to meet goals whether instrumentally object oriented or person oriented, such as dominating and coercing (Day, Bream, & Pal, 1992). In addition, proactive aggression is planned and maintained by environmental contingencies (Brown & Parsons, 1998), with aggressive acts committed for the acquisition of objects from someone. Goals include predation, dominance, and territoriality (Dodge & Coie, 1987). Furthermore, bullying, a form of person oriented proactive aggression is defined as hostile aggression with the intention to harm, dominate, intimidate, or coerce another person. These individuals overvalue the outcome of their aggressive behaviors and underestimate its impact on their victims (Brown, Atkins, Osborne, & Milnamow, 1996; Schwartz et al., 1999), appearing callous and insensitive toward others.

High levels of peer directed reactive anger and proactive coercive aggressive behaviors appear stable over time (Kindelberger & Mallet 2000; Dodge, Price, Coie, & Christopoulos, 1990) and reciprocal, where children who display aggression are

significantly more likely to become the recipient of aggressive behavior (Price & Dodge, 1989) with high conflict relationships possessing strong intradyad satisfaction (Dodge, Price, Coie, & Christopoulos, 1990).

Accordingly, a significant proportion of the literature focuses on reactive and proactive aggression toward peers, although many of the findings have been used to formulate theories and predict behavioral outcomes for older aggressive individuals. For example, Table A-1 shows over 72 percent of the studies included in this review examined normal school-aged children in contrast to juvenile delinquents and adults.

B. RESEARCH MEASURES

Three measures were widely used throughout the research on proactive and reactive aggression. Sociometric nominations and interviews were often the measures used to evaluate the degree of rejection by peers. Here, students named the three classmates they liked the most and the three they liked the least. This technique was used to study the reciprocal nature of peer friendships, rejection, victimization, and bullying. Another research measure of widespread use was direct observation of peer play groups. Dyadic groups of familiar and unfamiliar children were directly observed by trained coders.

For example, Schwartz et al. (1999) studied 66 black 8 year-olds and coded proactive boys when “non-angry goal oriented” aggressive behaviors occurred, such as teasing, physical abuse, or aversive means for acquisition of a desired object. Reactive aggression was coded when accompanied by some visible form of anger such as angry facial gestures or verbalizations (Price & Dodge, 1989).

Finally, an instrument created by Dodge and Coie (1987) provided the preliminary support of two separate behavioral profiles. This was a self-report instrument administered to teachers of 259 male and female 3rd to 6th graders. Twelve statements were employed to explore aggressive behavior. Table A-3 shows two 3-item scales, which were used to describe proactive and reactive behavior. Additional items appeared to obscure the distinction between the two aggressive subclasses and were dropped from the instrument. Dodge and Coie's (1987) findings indicate high levels of internal consistency for proactive ($\alpha=.91$) and reactive ($\alpha=.90$) aggression. Although the two scales correlate highly with each other, there is higher within-scale correlation.

Overall, studying young male participants is believed to be a more efficacious assessment of multiple forms of aggression than studying young females, as females typically show considerably less aggression than their male counterparts (Price & Dodge, 1989).

II. EMPIRICAL FINDINGS

A. PEER STATUS

When examining peer status, a positive feedback loop appears to exist between aggression and negative status. Children who are socially rejected are more likely to develop highly conflictual relationships (Dodge, Price, Coie, & Christopoulos, 1990), with increased aggression leading to more rejection and deviant peer group membership (Coie, Dodge, Terry, & Wright, 1991). Aggressive rejected boys are more argumentative, inattentive, disruptive, and less prosocial than aggressive non-rejected

boys. Aggressive rejected boys are less likely to believe their aggression is effective and are prone to more social-cognitive biases and elevated levels of aggression when compared to aggressive non-rejected boys. In addition, aggressive rejected boys use more indirect acts, such as tattling, and are less assertive.

Although the two subtypes of aggression are similar on level of aggression, they differ on peer ratings of social acceptance and non-acceptance (Yoon, Hughes, Cavell, & Thompson, 2000). There is a significant negative relationship between the display of reactive aggression and measures of peer status and social acceptance. Moreover, rejection from one's peer group may lead to an escalation in reactive aggression (Price & Dodge, 1989; Coie, Dodge, Terry, & Wright, 1991). When groups consisted of low reactive aggressive participants, increased enactment of reactive aggressive behaviors lowered the social preference score. However, within low proactive aggressive groups, the more enactment of proactive aggressive behavior the higher the social preference and peer status. Perhaps, this behavior is a show of power (Boivin, Dodge, & Coie, 1995).

Pellegrini, Bartini, and Brooks (1999) studied 87 boys and 67 girls (N=154) in 5th grade. They found that instrumental proactive aggression may relate to affiliation and status with other bullies because proactive aggression and dominance may be important characteristics in helping bullies to achieve and maintain leadership within their peer group. Although bullying scores are positively related to power and dominance, these scores are negatively related to popularity, contrasting reactive aggression scores which are positively related to victimization (Schwartz et al., 1999).

This negative relationship may mostly exist because bullying is person oriented and more frowned upon than object oriented instrumental proactive aggression. Similarly,

proactive aggressive individuals receive significantly higher scores than reactive and mixed reactive-proactive groups on leadership, intrusiveness, and good sense of humor (Dodge & Coie, 1987; Price & Dodge 1989).

B. SOCIAL ADJUSTMENT

In general, there is a significant association between reactive and proactive aggression and rule violation, social maladjustment, and global impairment (Waschbusch, Willoughby, & Pelham, 1998). High emotionality coupled with physical activity indicate a lack of self-control. When combined, these traits can lead to aggressive behaviors, general peer rejection, and continued affiliation with other aggressive peers. Although aggressive children are rejected by most of their peers, they appear to affiliate reciprocally with other aggressive children (Pellegrini, Bartini, & Brooks, 1999; Boivin, Dodge, & Coie, 1995). Similarly, aggressive responses appear more normal among preschool age children than among children only a few years older (Coie, Dodge, Terry, & Wright, 1991). Seemingly, as one's development progresses, expectations pertaining to the learning of prosocial skills increase with a decrease in the acceptance of aggressive behaviors.

Discriminative validity for reactive and proactive aggression shows that children of these subtypes of aggression differ on social-cognitive measures, peer popularity, and behavioral dimensions. For example, aggressive non-rejected boys, classifiable as proactive aggressive, hold social cognitive biases that reflect antisocial beliefs toward obtaining desired goals (Yoon, Hughes, Cavell, & Thompson, 2000).

A longitudinal study of 742 kindergarten boys from a low socio-economic metropolitan area found that proactive aggressive males are more prone to externalizing and criminality during adulthood. These findings suggest that proactive, and not reactive aggression, predicts delinquency and disruptive behavior (Vitaro, Gendreau, Tremblay & Oligny, 1998). These findings differ from those of Brown, Atkins, Osborne, and Milnamow (1996) who found reactive aggression more problematic when examining in-school suspensions.

One explanation of these authors' findings is that the increase in maladjustment may, in part, be due to the over-reactive aspects of this type of aggression, which receives more attention from teachers and school officials (Dodge, Harnish, Lockman, Bates, & Pettit, 1997). Dodge, Harnish, Lockman, Bates, and Pettit (1997) found that reactive aggressive individuals had longstanding histories of physical abuse, peer relational problems, inadequate processing patterns, and earlier manifestation of aggressive behaviors when compared to proactive aggressive individuals. Moreover, Waschbusch, Willoughby, and Pelham (1998) studied 405 children in kindergarten through 5th grades. They also found that reactive aggression is more strongly correlated with overall impairment, classroom behavior, and peer adjustment, at least during early and middle childhood.

When examining social adjustment, it appears that a majority of boys may be involved in friendships that perpetuate aggressive behaviors and are formed because of similarity in social behaviors, deviant behaviors, attitudes, interests, and personality. For example, proactive aggression represents an interactional behavioral style with initiatory instrumental and bullying components. Therefore, this subclass of aggression is likely to

be socially acceptable, and perhaps desirable in friendship formation among similar individuals (Poulin, Cillessen, Hubbard, Coie, & Schwartz, 1997).

Poulin and Boivin (2000) provide the first empirical support for proactive and reactive aggressive boys' tendency to affiliate more with aggressive peers as friends. Persisting friendships maintain their level of similarity in proactive aggressive behavior over time. Friendships that end involve boys who, at onset, are dissimilar in proactive behavior, although the same has not been found for reactive aggressive boys. While proactive aggression may develop through mutual influence (Poulin & Boivin, 2000), with greater levels related to satisfying friendships that are supportive and non-conflictual, reactive aggression is not based on mutuality.

Reactive aggressive boys who are frequently rejected by their peers come into new groups displaying a rate of aggression that is twice as high as proactive non-rejected boys (Dodge, Coie, Pettit, & Price, 1990). A dissimilarity effect appears important in maintaining these highly conflictual relationships. Unlike proactive aggression, reactive aggressive friendships are more stable when individuals are dissimilar in their levels of aggressive behaviors.

Poulin and Boivin (2000) state that proactive aggressive relationships could provide training for antisocial acts, offer protection from out-of-group coercion attempts, and ensure alliances where aggressive children may gain resources through coercive means. In contrast, reactive aggression appears to translate into interpersonal difficulties and less support and satisfaction, all of which impede relationship growth. However, over time friendships that are high in proactive aggression become less satisfying, whereas continued reactive aggressive friendships decrease in conflict.

This is suggestive of reactive aggression having less of a negative long-term impact on relationships (Poulin & Boivin, 2000). For example, Pulkkinen (1996) conducted a follow-up study of 8 year-old children when they were 27 and found that reactive aggressive participants had better self-control and adult adjustment than proactive aggressive participants. Proactive aggressive individuals had more problems with substance abuse and conduct.

C. HOSTILE ATTRIBUTIONAL BIAS

People understand their behavior and that of another through their experienced outcomes (Hudley & Friday, 1996). In discriminating types of aggression, Yoon, Hughes, Cavell, and Thompson (2000) state that hostile attribution and aggressive solutions contribute mostly in understanding aggressive acts for reactive aggressive individuals. Hubbard, Dodge, Cillessen, Coie, & Schwartz (2001) studied 66 familiar boys in play dyads over five consecutive days. Through interviews and coding proactive and reactive aggression during 45 minute play sessions, they found that hostile attributions were significantly related to dyadic reactive aggression ($p = .05$), but only marginally related to proactive aggression ($p = .09$). In addition, outcome expectancies for aggression were significantly related to proactive aggression at the dyadic level ($p = .05$). These findings show the differences in the two constructs as well as differences in behaviors.

Dodge, Price, Bachorowski, and Newman (1990) studied boys in a maximum security prison for juvenile delinquents. They found that hostile attributional bias scores had a significant and positive correlation with the number of interpersonally violent crimes

committed. Finally, the biased tendency to attribute intentions as hostile positively correlated with the level of severity of reactive aggressive anger and undersocialized aggression while proactive aggression is linked to the belief that it leads to positive outcomes.

Further, Dodge and Coie (1987) completed two studies that produced significant findings pertaining to the relationship between reactive aggression and hostile attributional bias. In the first study, participants were given vignettes to read. Although all groups were highly accurate in recognizing true hostile intentions, reactive aggressive individuals were more inaccurate than others in identifying benign intentions and generated more aggressive responses to ambiguous stimuli.

In their second study, Dodge and Coie (1987) found that the number of hostile attributions made was positively correlated with the direct observation of over reactive aggression, but not with the direct observation of proactive aggression. The proactive and reactive scores were stable, at least over a short period of time, as an individual's predominant aggressive subtype remained throughout the week of their research participation.

Perhaps, the stability and existence of hostile attributional bias is suggestive of a type of processing deficit (Dodge & Coie, 1987). Certainly, aggressive individuals make hastily inappropriate judgments about the intent of others, which justify their use of unwarranted retaliatory aggression (Hudley & Friday, 1996).

D. OUTCOME EXPECTANCY

Outcome expectancy findings appear robust across populations and level of aggression. For example, Smithmyer, Hubbard, and Simons (2000) found significant outcome expectancies for 86 incarcerated males with severe aggression (mean age=17). Proactive aggressive youths expect fewer negative outcomes and more positive outcomes for their aggressive behavior than reactive aggressive youths. Regardless of the type of vignette presented (e.g., instrumental aggression, bullying, reactive aggression), youths high in proactive aggression expect more positive outcomes, instrumental success, peer approval, and good feelings after the aggressive act (Smithmyer, Hubbard, & Simons, 2000). Aggressive non-rejected boys also expect positive outcomes and rewards for their acts (Yoon, Hughes, Cavell, & Thompson, 2000).

Crick and Dodge (1996) state that proactive children evaluate verbal and physical aggressive acts more positively than children who do not demonstrate proactive aggressive behaviors. These aggressive behaviors may become stronger over time because of an increased opportunity to observe the effectiveness of the aggression combined with increased confidence of such individuals to enact these behaviors. However, reactive aggression may be maintained through other means. This subtype of aggression may be maintained through a negative feedback loop in which the child's peers respond with increased hostility. This cycle is then interpreted as confirmation of the earlier negative view of relationships, forming a self-fulfilling prophecy. Crick and Dodge (1996) also found that among a normal sample of 9 to 12 year-old school children,

older children chose more relational goals and evaluated aggression more negatively than younger children.

E. COEXISTENCE OF SUBTYPES

Throughout the literature, individuals who are both reactive and proactive outnumber those who are reactive only or proactive only. Dodge and Coie (1987) state that relatively few individuals are classifiable as exclusively proactive or reactive in their aggression. These researchers studied 339 1st to 3rd grade boys and girls and found that the highest percentage of children are classifiable as both reactively and proactively aggressive (49%) versus proactive aggression only (9%), reactive aggressive only (14%), and non-aggressive (29%).

However, the inclusion of both subclasses of aggression does better at revealing the processes underlying children's functioning than the study of aggression as one unitary construct (Vitaro, Gendreau, Tremblay, & Oligny, 1998; Waschbusch, Willoughby, & Pelham, 1998). Individuals who are high on reactive aggression are more anxious and withdrawn than individuals possessing low levels of reactive aggression. Therefore, it is believed that individuals who are proactive aggressive, but also high in their levels of reactive aggression, act with less predation (Vitaro, Gendreau, Tremblay, & Oligny, 1998). Seemingly, the psychological structure or disposition of the reactive aggressive individual act as a barrier in initiating aggressive behavior for proactive-reactive individuals.

Cornell et al. (1996) attempted to provide construct clarification of reactive violent offenders, instrumental violent offenders, and non-violent offenders through the use of

group classification, official records, and Robert Hare's 1990 instrument entitled, "Psychopathy Checklist-Revised." Two studies were completed. The first included 106 violent and non-violent offenders in a medium security facility, whereas the second study included 50 violent offenders in a maximum security facility. These researchers defined instrumental offenders as having at least one instrumental violent crime for purposes other than responding to provocation. Reactive offenders were individuals who had reactive violent offenses, involving interpersonal conflicts without any history of instrumental crime.

Their findings indicate that regardless of the mixture of violence, instrumental offenders were significantly more psychopathic than the reactive aggressive offenders. Proactive aggressive offenders were more insensitive to social morals and were more deficient of emotional prohibitions against violence. Therefore, proactive aggressive individuals more willingly engaged in violent behavior for instrumental purposes. In contrast, non-psychopaths assaulted familiar people during a period of extreme emotional arousal, which is more fitting with the description of reactive aggression.

Almost all of the proactive aggressive individuals had a history of reactive violence, although not necessarily resulting in criminal convictions. With more serious offenses, instrumental offenders were increasingly likely to have identifiable goals (i.e., robbery), but were not more likely to plan their offense (Cornell et al., 1996). These findings appear contradictory to studies of non-delinquent populations. Throughout the literature, the definition of proactive aggression is based mostly on planned action, but apparently may not hold true among serious offenders.

Edmunds and O'Hagan (1981) studied five types of aggression among three groups of youth. Those included were aggressive delinquents, non-aggressive delinquents, and non-delinquents. The five types of aggression included reactive, proactive, social, initiatory hostile, and reactive instrumental (i.e., both over- reactive and initiatory). They found that opinions about aggression among 13 to 16 year-old boys depended mostly on the situation eliciting the aggression and not necessarily group assignments that were based on participant aggression characteristics.

Therefore, perhaps all aggression is not viewed as wrong or immoral, as non-delinquents also agreed with some forms of aggression based on the situation eliciting the aggression. Non-delinquents treated as "normals" agreed with certain types of aggression, with the combined type (i.e., reactive instrumental aggression) receiving the most approval. In addition, only members of the aggressive delinquent group reported higher approval of initiatory instrumental aggression such as robbery (Edmunds, 1978; Edmunds & O'Hagan, 1981).

It appears that the norm of reciprocity may provide justification for aggressive behavior for social reasons and when used in the defense of one's own property. Initiatory aggression (i.e., instrumental, hostile) is least favored and appears to deviate from social norms. However, evaluations of the morality of aggression do not depend only upon the social or personal nature of the behavior, but also upon the individual's motive and on whether or not the respondent initiated the aggressive event (Edmunds, 1978).

F. PRESENT STUDY

The present study is employed in order to use various forms of information (i.e., self-report instruments, projective assessments, medical records), to distinguish characteristics of reactive and proactive aggressive individuals by examining the psychological disposition and social history of youths who have experienced legal problems. The comprehensive examination of differences among delinquent youths lends itself to the provision of more efficacious treatment and prevention of future criminal behavior. By obtaining information from the participant's psychological assessment, the parent, and medical records, a better understanding of the underpinnings of aggression and fine distinctions between aggressors may be revealed.

Archival data were used in this investigation. The participants who participated were all facing charges in juvenile court and were ordered to receive psychological assessments in an effort to provide a comprehensive evaluation by addressing externalizing and internalizing behaviors, cognitive abilities, and social relationships.

Four categories of youths, including those low in reactive-proactive aggression; high in proactive aggression; high in reactive-proactive aggression; and distressed delinquents will be examined.¹ On the basis of previous research findings surrounding the clarification of distinguishing characteristics of reactive and proactive aggressive youth, the following hypotheses are offered:

1. More significant differences will be found for comparisons of reactive and

¹ The statistical procedures and theoretical framework used to form groups of reactive and proactive aggressive delinquents will be given in the Statistical Analysis section of this paper.

proactive aggression between the HDY and H-RA groups than all other groups. These two groups are believed to represent opposite ends of the continuum of psychological functioning for delinquent youths, with the HDY group consisting of more adaptive members and the H-RA group consisting of more emotionally disturbed individuals.

2. Juvenile delinquents who score high on both internalization and externalization measures such as the H-RA group will have significantly more global psychological impairment in terms of interpersonal relatedness, impulsivity, social isolation, and their ability to cope than those who commit proactive aggressive acts (H-PA). Youths with a considerable level of both reactive and proactive aggression are believed to show more maladjustment due to the complexity of their psychological make-up, manifesting more negative outcomes than other groups of delinquent youths.
3. Proactively aggressive juvenile delinquents (H-PA) will have greater scores than the H-RA group on scales measuring observable problematic behaviors, as proactive aggressors are believed to be initiatory in their offending patterns with less emotion or apprehension surrounding their behaviors.
4. Juvenile delinquents who score low on both internalizing and externalizing measures (HDY) will also have fewer violent offenses when compared to their more disturbed peers. They are expected to have less severe over reactions to situations and be less initiatory than their peers.
5. Female juveniles who are adjudicated for criminal activity will show significantly

greater displays of reactive aggressive behavior than males, and they will also score higher on internalizing scales than their counterparts. This is hypothesized because offending females are believed to have less serious consequences than males at the onset of their criminal activity. Furthermore, it is believed females are brought to the attention of the courts because of the repetitive acting out, which proves difficult for authority figures (i.e., teachers, parents, law enforcement) to ignore.

CHAPTER III METHOD

I. PARTICIPANTS

The participants of this archival study were 56 male and 24 female (N=80) court-referred individuals, ages 13 to 17 (M=15) in 6th through 12th grades (M=9th grade), facing criminal charges at the time of completing the testing process. Participants agreed to complete psychological assessments, which were financed by a state funded research project at a local community mental health facility. The participants were from rural and underserved communities in the Appalachian area of East Tennessee and at risk of being placed in the state's custody.

Psychological evaluations were ordered for individuals whose offenses were thought to be symptomatic of unidentified or untreated emotional disorders. Although there were no absolute guidelines, the courts were encouraged to refer children who had numerous charges. Due to the ethnic demography of the East Tennessee Appalachian area, the majority of the referred youths were Caucasian (97.5%), with the remaining being Afro-American and Asian (2.5%).

II. PROCEDURE

The data used in the present study were based on a two-year state funded project. Records of participants in the project were retrieved from a database located at the community mental health center. During initial data collection, a clinical social worker from the mental health center attended court sessions and collected contact information

for scheduling future appointments with offenders who agreed to participate in the project. A Masters-level clinician in either social work or psychology conducted an intake interview with the child and his or her family. This clinician also collected records from the court, the child's school, and previous treatment providers. Subsequently, the child was scheduled for psychological testing with a Licensed Psychological Examiner (LPE).

The participants were given a battery of tests. However, the measurements used in this study included the Wechsler Abbreviated Scale of Intelligence, the Achenbach Child Behavior Checklist-Youth Self-Report, the Stress Index for Parents of Adolescents, the Millon Adolescent Clinical Inventory, and the Rorschach (Exner Comprehensive System and Urist Mutuality of Autonomy Scales). Once testing was completed, the LPE consulted with both a licensed clinical psychologist and the intake clinician to ensure agreement of the youth's diagnosis. Changes in the diagnostic impression were made if necessary. Based on this process, three mental health clinicians agreed upon each participant's diagnosis prior to it being assigned.

III. TEST INSTRUMENTS

Wechsler Abbreviated Scale of Intelligence (WASI). Any participant who had not been administered an intelligence test two years prior to being evaluated was administered the WASI. This instrument is designed as a short and reliable form of the Wechsler Adult Intelligence Scale (WAIS), individually administered to people who are 6 to 89 years old. The WASI is composed of four subtests, including two Verbal (i.e., Vocabulary, Similarities) and two Performance (i.e., Block Design, Matrix Reasoning)

subtests. These four subtests have been used in the development of the WASI because they have been shown to be a valid measure of intelligence with high loadings on general intelligence (g factor) and high reliability (Psychological Corporation, 1999). The majority of adolescents who had testing records on file at their respective schools had been administered the Wechsler Intelligence Scale for Children, 3rd Edition, which is correlated with WASI's Verbal IQ score (.82), Performance IQ score (.76), and Full Scale IQ score (.87) (Psychological Corporation, 1999).

Child Behavior Checklists-Youth Self-Report (CBCL-YSR): The CBCL is a multi-informant assessment of a child's behavioral adjustment, which was developed for children ages 2 to 18, and can be administered individually or in a group format. There are three types of individual rating forms available, including Parent, Teacher, and Youth Self-Report forms, with 89 items common to all three checklists.

Scales on the YSR are rated 0 to 2 (i.e., Not True, Somewhat or Sometimes True, Very True or Often True) respectively, and children are instructed to respond based on the past six months. Scores are obtained on clinical scales, including Withdrawn, Somatic Complaints, Anxious-Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, Aggressive Behavior, Internalizing, Externalizing, and Total Problems (Achenbach, 1980).

The CBCL has been shown to have exemplary reliability with internal consistency and one-week test-retest coefficients above .89 (Achenbach, Edelbrock, & Howell, 1987; Achenbach & Brown, 1991). In addition, Horsch (2000) conducted a validation study of the MACI and YSR, with 598 adolescents over a three-year time span. Horsch (2000)

states there were high correlations of individual scales between the two instruments, indicating moderate concurrent validity.

Stress Index for Parents of Adolescents (SIPA): The SIPA is a 112-item self-report instrument administered individually or in a group format to parents of 11 to 19 year-old youths. It was developed in order to assess parenting stress by providing normative data and measuring changes in stress levels over time.

This instrument contains five clinical scales, including child variables on the Adolescent Domain (i.e., Moodiness-Emotional Lability, Social Isolation-Withdrawal, Delinquency-Antisocial, Failure to Achieve or Persevere), parent variables on the Parent Domain (i.e., Life Restrictions, Relationship with Spouse-Partner, Social Alienation, Incompetence-Guilt), parent-child transactions on the Adolescent-Parent Domain, life stress events on the Life Stressors Domain, and Total Parenting Stress. Responses to the 90 items on the first two domains (i.e., Adolescent Domain, Parent Domain) are presented on a five-point Likert scale, ranging from Strongly Agree to Strongly Disagree. The remaining 22 items occur in a Yes-No format.

Sheras, Abidin, and Konold (1998) state the SIPA has been shown to have a high degree of internal consistency, with coefficient alphas for subscales exceeding .80. In addition, test-retest reliability is acceptable at the domain and total test level. Sheras, Abidin, and Konold (1998) also state the SIPA has proven validity. Factor analytic procedures have been used to show construct validity with high intercorrelations among domains and their subscales. Additionally, content, convergent, and discriminate validity have been shown to be significant.

Millon Adolescent Clinical Inventory (MACI): The MACI is a 160-item self-report instrument presented in True-False format to adolescents, ages 13 to 19 years old. This test, which is intended to be used with clinically “disturbed” children, was developed to measure an individual’s personality and self-reported clinical concerns.

The MACI can be administered individually or in a group format and consists of 27 scales, which measure Personality Patterns (i.e., Introversive, Inhibited, Doleful, Submissive, Dramatizing, Egoistic, Unruly, Forceful, Conforming, Oppositional, Self-Demeaning, Borderline Tendency), Expressed Concerns (i.e., Identity Diffusion, Self-Devaluation, Body Disapproval, Sexual Discomfort, Peer Insecurity, Social Insensitivity, Family Discord, Childhood Abuse), Clinical Syndromes (i.e., Eating Dysfunctions, Substance Abuse Proneness, Delinquent Predisposition, Impulsive Propensity, Anxious Feelings, Depressive Affect, Suicidal Tendency), and three Modifying Indices (i.e., Disclosure, Desirability, Debasement) used to assess response bias and the individual’s approach to test-taking by examining the child’s willingness to disclose problems and his or her tendency to present in an unrealistically positive or negative manner (Millon, Millon, & Davis, 1993).

The MACI is considered a reliable and valid tool for assessing dimensions of personality in adolescents. Salekin (2002) investigated factorial validity of this instrument in a sample of 250 adolescent offenders, ages 13 to 18 years old. A two-factor solution was obtained for the 12 personality scales. Factor 1 consisted of 6 scales that were mood-related (e.g., introversive, inhibited), and Factor 2 consisted of 6 scales that were behavior-related (e.g., unruly, forceful). Hiatt & Cornell (1999) used the MACI to examine concurrent validity in the assessment of depression among 88 adolescent

inpatients. They found that Doleful Personality and Depressive Affect scales were predictive of a clinical diagnosis of depression, indicating the use of the MACI for clinical populations. Because the MACI has demonstrated high reliability and validity (Strack, 1999), it is considered one of the most widely used personality assessment instruments for adolescents (McCann, 1999).

Rorschach (Exner Comprehensive System): The Rorschach is a projective measure, individually administered to people who are five and older. The examinee is shown ten inkblots, one at a time, and is asked, “What might this be?” The response time and verbatim response is then recorded. If the participant gives one response to Card I only, the test administrator states, “Take your time and look some more. I’m sure you’ll find something else too.” A record of fewer than 14 responses is not scored, and the Rorschach is readministered. Once the criterion for the number of responses is met, the Inquiry Phase of testing begins in which the examiner asks the test taker to describe the location and features of each percept. The Rorschach is then scored for Developmental and Form Quality, Determinants, Content and Populars, Organizational Activity, and Special Scores. A Structural Summary is completed and clusters, including response ratios, percentages, and derivations are computed (Exner, 1995).

Urist Mutuality of Autonomy (MOA) Scale: The MOA Scale was developed to measure mental representation through projective identification of mutual and autonomous movement (i.e., human, animal, inanimate) among figures that are found in participants’ responses on the Rorschach. The scales, 1 through 7, are based on the individual’s experience of the “self” and “others” along a developmental continuum with

differentiation drawn between healthier responses (e.g., object-relatedness) and pathological representation (e.g., narcissism, borderline personality disorder).

MOA Scale scores are based on the premise that participants consistently experience the “self” and “others” in characteristic ways, which reflect a participant’s developmental level of psychological structure with a range of behaviors across varying levels of functioning. For the purposes of the current study, Scale 5 was divided into two categories, representing parallel negative interactions (e.g., fighting, yelling, glaring) and malevolent control (e.g., casting spells), respectively.

In addition to high internal consistency ($p = .001$), the MOA has been shown to have more than acceptable inter-rater reliability (.86). Further, this scale has been found to be a valid measure of mutuality and autonomy as the overall rating tended to correlate with other tests measuring individuals’ healthier and pathological functioning (Urist, 1977).

Urist and Shill (1982) replicated earlier empirical findings by examining excerpted Rorschach responses from 60 psychological patients, ages 13 to 17 years old. They found high reliability, with significantly correlated independent clinical ratings of MOA scores. In addition, Ryan, Avery, and Grolnick (1985) studied 127 4th to 6th grade children and found that MOA scales were significantly related to teacher ratings of interpersonal functioning in the classroom and academic grades. Findings also revealed significant correlations between MOA scales and children’s perceived control.

IV. STATISTICAL ANALYSES

Based on findings from a previous study that used this archival data to form a five-cluster hierarchical solution from scores on the CBCL-YSR and MACI (Castellani, 2002), the current researcher used Ward's method to form four clusters of reactive and proactive aggression.² Similar to Castellani (2002), variables from both the YSR and MACI were used as criteria to group participants into four predetermined categories based on their low and high scores obtained on the Externalizing (i.e., YSR-externalizing; MACI Substance Abuse Proneness, Delinquent Predisposition, and Impulsive Propensity) and Internalizing (i.e., YSR-internalizing; MACI Anxious, Depressed, and Suicidal) dimensions. The theoretical premises underlying the formation of groups used in this study is based on the above-referenced literature review and definitions of reactive and proactive aggression, with high proactive aggression consisting of mostly externalizing youth while reactive aggression consists of mostly internalizing, impulsive, and over reactive youth.

Participants' scores on the Internalizing and Externalizing dimensions were first standardized into z-scores. Hierarchical cluster analyses were then computed based on the participant's z- scores. Using this procedure, youths were added one at a time until the greatest similarity or the least distance of characteristics was created. Cluster membership was formed based on the mean and standard deviations of each of the four

² Castellani (2002) used Ward's method to form five groups of delinquent youth based on agglomeration coefficients of low and high internalizing-externalizing scores. Due to the indistinctive features of one of the groups, a four-cluster solution was deemed to be the best fit for this study.

groups, with distinctions being made between low and high scores on clinical scales measuring internalizing and externalizing characteristics.

Ward's method has proven acceptability in clustering cases or participants. Kamphaus, Huberty, DiStefano, and Petoskey (1997) used this method to study classroom behavior for school children, which resulted in seven clusters, including disruptive behavior disorder, mildly disruptive, and severe psychopathology. These authors found that the delineated clusters resembled those of Achenbach (1991).

A Multivariate Analysis of Variance (MANOVA) was used to examine additional scales from the YSR and MACI that were not used in conducting the hierarchical cluster analysis. This procedure was completed in order to detect significant relationships among scales and group membership. Scales from the SIPA were also examined using the MANOVA statistical procedure in order to analyze differences in participants' based on their cluster membership.

In this study, predetermined structural variables from the Rorschach were combined, based on the Exner Comprehensive System search strategy, which groups variables and determinants into clusters (e.g., Cognitive Mediation, Interpersonal, Affective). Ratios, percentages, and derivations as well as five additional indexes (e.g., Schizophrenia, Depression, Suicidal Constellation, Coping, Obsessional) facilitate the clinician in describing personality style and assessing personality strengths and weaknesses (Exner, 1995; Weiner, 1998). Normative data based on demographic variables, such as the age of participants, and descriptive statistics are available for cross-cultural utility and intra-group differences (Exner & Weiner, 1995).

In order to establish reliability, two independent raters, who were advanced psychology students, scored 20 randomly selected protocols, an acceptable sample size in the field of research (Weiner, 1998). Cohen's kappa was computed for inter-rater agreement. Kappa, which is suggested as a standard estimate of reliability, was chosen to calculate agreement between the two raters because it appears to be a conservative and reliable statistical procedure (Gronnerod, 1999).

Individual Rorschach variables were then grouped into four indexes, labeled Interpersonal, Labile, Self-Perception, and Cognitive in order to test for significance as a function of the four aggressive groups. The determinants of these indexes were standardized into z-scores in order to analyze data presented in both frequency and ratio form. Due to the lack of a normal distribution of the data, a transformation of the z-score variables into ranked cases by group membership was computed, with ranks assigned to tied scores based on the mean score values.

Conover (1999) states nonparametric statistical procedures can be completed by applying the rank transformation to the data (i.e., replacing the data by their ranks) and then using the usual parametric procedure, but on the ranks instead of on the original data. Conover (1999) also states the parametric test then automatically corrects for ties, and usually the approximate p -value is as good as or better than the usual normal or chi-squared approximation. Therefore, tests of between-participant effects were examined for the mean scores of the ranked cases in order to complete a nonparametric Multivariate Analyses of Covariance (MANCOVA). The participants' age, number of responses on the Rorschach, gender, and Performance and Verbal IQ scores were used in multiple

pairwise comparisons of dependent variables by group membership in order to ascertain whether or not any of these variables covaried with the Rorschach determinants.

Inter-rater agreement using Cohen's kappa was then computed for MOA Scales by randomly selecting protocols (N=20) to be scored by two independent raters who were advanced psychology students. Instead of using a single MOA mean score, four variables were utilized in an effort to provide even more data than the mean score allows because the use of only one score may mask the individual's range of potential relatedness (Ackerman, Hilsenroth, Clemence, Weatherill, & Fowler, 2001). Two of the MOA variables were the total number of points for Scales 1 and 7 (MOA-1 and MOA-7 respectively) found on each protocol. The third variable was the single highest or least adaptive MOA score (MOA-H). The fourth variable used was the single lowest or most adaptive MOA score (MOA-L).

As before when examining the Rorschach Indexes, the data were not normally distributed. Therefore, the significance of MOA-7 as related to the four groups of aggression was analyzed using a nonparametric test. Descriptive statistics using cross tabulations and computations of Chi Square for this subscale were employed. Furthermore, a transformation of the data was completed for the remaining MOA subscales. In order to compute a MANCOVA, with the above-referenced covariates, MOA-1, MOA-L, and MOA-H were ranked by cases. Pairwise comparisons of between-participant effects were then examined with the mean scores of these cases.

In addition to analyzing data from self-report and projective measures as a function of cluster membership, statistical procedures were completed with information obtained from the participant's records made available by the court or shared with the clinician

upon intake at the community mental health center. These data were categorized and coded for purposes of analysis.

Participants' chemical use received a zero (.00) if the available records did not show prior substance abuse problems and a one (1.00) if there was information from the court or medical records indicating the individual had previously used illegal substances. After having two advanced psychology students independently code types of crime, reliability was established by computing Cohen's kappa ($k = .86, p \leq .001$). The types of crime committed was coded a one (1.00) for non-violent offenses and a two (2.00) for violent offenses. Whenever participants committed both violent and non-violent crimes, they received a score of two (2.00). The number of arrests was coded either a one (1.00) or a two (2.00). When participants had only one arrest, a one (1.00) was coded. Individuals who had been arrested more than once were assigned a two (2.00). Lastly, participants' diagnoses were initially categorized into three types: depressive disorders (1.00), conduct problem disorders (3.00), and anxiety-related disorders (4.00). However, descriptive statistics revealed that the NDY group ($N=24$) did not contain any cases for anxiety-related disorders. Instead, group members were diagnosed as either depressed ($n=20$) or conduct disordered ($n=4$). Therefore, categories of this dependent variable were merged into two groups, mood disorders (1.00) and conduct disorders (4.00).

Binary logistic regression analyses were then conducted in order to ascertain whether or not the dichotomous variables chemical dependency, crime type, diagnosis, and the number of times participants were arrested were related to group membership. When using logistic regressions, the criterion or dependent variable must be categorical, while the predictor variables can include both categorical and continuous variables. In general,

this procedure allows the researcher to estimate the odds of one level of the dependent variable occurring on the basis of the values of the predictor variables (Nicol & Pexman, 1999).

CHAPTER IV RESULTS

I. HIERARCHICAL CLUSTER ANALYSIS

Descriptive statistics were computed by combining variables from the YSR and MACI personality inventories in order to form four clusters based on a combination of high and low scores on Internalizing and Externalizing dimensions. Statistical analyses were based upon covariance matrixes of values and comparisons of paired values. Table B-1 shows the between-group differences as a function of group membership on the Internalizing and Externalizing dimensions.

Based on the agglomeration coefficients from the Ward's method, a four-cluster solution was obtained. Cluster 1 (N=23) includes participants who tend to score low on both internalizing and externalizing variables, which is suggestive of an attempt to look socially acceptable. This group of offenders is labeled "Healthier" Delinquent Youth (HDY) because they appear more adjusted than other delinquent youths in this study.

Cluster 2 (N=21) includes participants who tend to score lower on internalizing variables and higher on externalizing variables, similar to youths who possess conduct disorder characteristics or antisocial tendencies. This group experiences little emotional distress pertaining to their acting-out behaviors, and is labeled High-Proactive Aggressive (H-PA). Cluster 3 (N=25) includes participants who score higher on internalizing than externalizing variables, a combination of internal distress with less impulsive, outward, conduct problems. This group is labeled Neurotic Delinquent Youth (NDY) because of

their characteristic inner emotional conflict without chronic externalized problematic behaviors.

The last category, Cluster 4 (N=11), includes participants who score high on both internalizing and externalizing factors, which is suggestive of significant global pathology. Individuals in this group are labeled High-Reactive Aggressive (H-RA) because of their tendency to over react to perceived slights and their dysregulation of affect. These youths are associated with poor functioning and problem solving abilities, with pervasive and chronic clinical impairment.

II. YOUTH SELF-REPORT

The analysis of data continued with the use of self-report instruments to examine differences among selected scales and groups of aggressive youth. For examination, there were seven scales chosen from the YSR. Prior to completing a MANOVA, intercorrelations of these seven scales combined with the three scales originally used to form the clusters were computed. As expected, the intercorrelations yielded significant relationships among the scales, thereby demonstrating high construct validity. Table B-2 shows these findings. The Total Problems scale obtained the highest correlations between the Internalizing and Externalizing dimensions. Correlation coefficients for internal consistency were .85 and .84 ($p \leq .01$), respectively.

Based on the MANOVA, there were significant differences found among each of the YSR dependent variables analyzed as a function of cluster membership. The model was statistically significant ($p \leq .001$, $df = 3, 76$) when comparing Withdrawn ($R^2 = .16$, $F =$

4.86), Aggressive Behavior ($R^2 = .39$, $F = 8.59$), Anxious-Depressed ($R^2 = .17$, $F = 5.27$), Delinquent Behavior ($R^2 = .23$, $F = 7.46$), and Total Problems ($R^2 = .39$, $F = 16.47$).

Table B-3 shows statistically significant differences between the HDY group and the H-RA group in which the HDY group scores were significantly lower than the H-RA group scores on each of the YSR scales ($p \leq .05$). These findings support the first hypothesis that the HDY group is more psychologically well-adjusted than high aggressive individuals (H-RA), with considerable differences in patterns of behavior and expressions of emotions.

The HDY group also scored significantly lower than the H-PA and the NDY groups on Aggression ($MD = -10.85$, $SE = 2.64$, $p \leq .05$ and $MD = -6.37$, $SE = 2.53$, $p \leq .05$ respectively) and Total Problems ($MD = -11.35$, $SE = 2.47$, $p \leq .05$ and $MD = -11.98$, $SE = 2.47$, $p \leq .05$ respectively). Except for the HDY group's substantially lower scores than the NDY group on Delinquent Behavior ($MD = -6.11$, $SE = 3.04$, $p \leq .05$), the remaining HDY group comparisons were nonsignificant. There were no significant differences found between the HDY group and the H-PA and NDY groups on the Withdrawn or Anxious-Depressed scales on the YSR measure.

Lastly, the H-PA group scored significantly less than the NDY group ($MD = -6.74$, $SE = 2.83$, $p \leq .05$) and the H-RA group ($M = -12.38$, $SE = 2.83$, $p \leq .05$) on the Anxious-Depressed scale, while the NDY group scored significantly lower than the H-PA group on the Delinquent Behavior scale ($MD = -7.04$, $SE = 3.11$, $p \leq .05$). These findings strongly support the third hypothesis that the H-PA group exhibits more displays of problematic behavior than other groups of delinquent youth without any inner conflict or turmoil surrounding their rule violation.

III. STRESS INDEX FOR PARENTS OF ADOLESCENTS

Based on findings from the calculated MANOVA, pairwise comparisons of the mean differences for the SIPA scales as a function of cluster membership were analyzed. The model was statistically significant ($p \leq .001$, $df = 3, 76$) for Lability ($R^2 = .17$, $F = 5.31$), Isolation ($R^2 = .02$, $F = .60$), Failure to Achieve ($R^2 = .11$, $F = 2.97$), Guilt ($R^2 = .06$, $F = 1.59$), and Parent-Child Relationship ($R^2 = .13$, $F = 3.92$).

Table B-4 shows the HDY group scored significantly less than each of the H-PA, NDY, and H-RA groups on Lability ($MD = -20.73$, $SE = 6.41$, $p \leq .05$; $MD = -13.55$, $SE = 6.14$, $p \leq .05$; and $MD = -26.64$, $SE = 7.79$ respectively) and Parent-Child Relationship ($MD = -20.75$, $SE = 6.34$, $p \leq .05$; $MD = -12.81$, $SE = 6.07$, $p \leq .05$; and $MD = -16.83$, $SE = 7.70$, $p \leq .05$ respectively). While the HDY group was expected to score lower than the NDY and H-RA on the Lability scale, this was not expected to occur between the HDY group and the H-PA group because of the H-PA group's characteristic lack of emotion and callousness. In addition to scoring lower than the H-PA and NDY groups on the Failure to Achieve scale ($MD = -16.27$, $SE = 6.13$, $p \leq .05$ and $MD = -14.57$, $SE = 6.90$, $p \leq .05$), the HDY group scored significantly less than the NDY group on the Guilt scale ($MD = -14.63$, $SE = 6.90$, $p \leq .05$). These findings support the first hypothesis in which the HDY group appears less impaired and more adjusted than other groups of delinquent youth while moderating internal conflict and feelings of guilt.

IV. MILLON ADOLESCENT CLINICAL INVENTORY

The MACI self-report instrument was analyzed for significant differences among scales and aggressive groups. Prior to completing a MANOVA, intercorrelations revealed significant relationships among the scales. Results show the MACI scales are high in construct validity, with the Forceful scale and the Impulsivity scale obtaining the highest correlation coefficient of .80, $p \leq .01$. Table B-5 shows these intercorrelations. The model was statistically significant ($p \leq .001$, $df = 3, 75$) for Unruly ($R^2 = .38$, $F = 15.57$), Forceful ($R^2 = .39$, $F = 15.84$), Conformity ($R^2 = .43$, $F = 19.41$), Oppositional ($R^2 = .59$, $F = 15.80$), and Devaluation ($R^2 = .43$, $F = 36.44$).

With the exception of the nonsignificant difference found between the HDY group and the H-PA group on the Devaluation scale ($MD = 2.38$, $SE = 5.63$, $p = .67$), Table B-6 shows the HDY group members scored significantly less than the remaining three groups on each of the MACI scales included in this study ($p \leq .05$). Upon further examination, only the mean difference score between the HDY and H-PA groups on the Unruly scale ($MD = -34.84$, $SE = 5.27$, $p \leq .05$) exceeded the comparisons of the HDY and the H-RA groups on the MACI scales. These findings support the first hypothesis that there substantial group differences between the HDY group and other groups of delinquent youth.

Furthermore, the NDY group scored significantly less than the H-PA group on the Unruly ($MD = -16.66$, $SE = 5.17$, $p \leq .05$) and Forceful ($MD = -15.21$, $SE = 5.56$, $p \leq .05$) scales, while the NDY group scored significantly greater than the H-PA and H-RA groups on the Devaluation scale ($MD = 25.70$, $SE = 5.52$, $p \leq .05$ and $MD = 37.71$, $SE =$

6.94, $p \leq .05$ respectively). This finding is suggestive of pessimistic thoughts and feelings regarding one's sense of self for the NDY group.

Lastly, the NDY group scored significantly lower than the H-RA group on Forceful and Oppositional scales ($MD = -21.49$, $SE = 6.79$, $p \leq .05$, and $MD = -15.80$, $SE = 5.60$, $p \leq .05$ respectively), while the H-RA group scored significantly less than the NDY group on the Conformity scale ($MD = -22.29$, $SE = 5.20$, $p \leq .05$). These findings were in their expected directions, and support the second hypothesis that the H-RA group would appear more globally impaired with negativistic ways of behaving and interacting in the world.

V. EXNER COMPREHENSIVE SYSTEM

Cohen's kappa, a statistical procedure used to test whether or not score agreement exceeds chance levels for binary and nominal ratings, was chosen to calculate reliability of scoring on the Rorschach protocols. Table C-3 shows the standard error of measurement and kappa for the different raters. Rater agreement for Rorschach determinants significantly exceeded chance. Kappa values of .75 or higher are considered excellent agreement beyond chance; values between .60 and .74 are considered good agreement; values between .40 and .59 are considered fair agreement; and values below .40 are considered poor agreement (Fleiss, 1981). The kappa values obtained in this study for Rorschach determinants ranged from good agreement to excellent values beyond chance.

A MANCOVA, with ranked cases for these distribution-free data, was computed for the Rorschach determinants. In addition, the effects of gender, age, intelligence, and the

number of Rorschach responses were included as covariates. There were significant effects for the number of Rorschach responses, which became a weighted covariate in the general model. Mean differences were significant among several of the groups of proactive and reactive aggressive youths when examining Rorschach determinants.

The model for the Interpersonal Index was statistically significant ($p \leq .001$, $df = 3$, 76) for Sum Texture ($R^2 = .38$, $F = 15.65$), Whole Human ($R^2 = .14$, $F = 4.02$), Food ($R^2 = .22$, $F = 7.22$), Aggression ($R^2 = .19$, $F = 5.78$), Cooperation ($R^2 = .12$, $F = 3.35$), and Isolation ($R^2 = .11$, $F = 3.07$). With the exception of the difference found between the H-RA group and the H-PA group on the Cooperation determinant, Table C-4 shows the Interpersonal Index in which there are statistically significant differences between the H-RA group and the remaining three groups on each of the determinants located in this Index ($p \leq .05$). The first hypothesis that the HDY group would be psychologically different from the H-RA was supported in the Interpersonal Index for each of the determinants studied ($p < .05$).

In addition, the HDY and H-PA groups in the Interpersonal Index obtained significantly lower mean scores than the NDY group for Sum Texture ($MD = -2.53$, $SE = .90$ and $MD = -3.52$, $SE = .97$, $p < .05$ respectively). The H-PA group also scored lower than the NDY group for Food ($MD = 3.12$, $SD = 1.52$, $p < .05$). These findings support the third hypothesis, suggesting that the HDY and the H-PA groups' conduct problems are less likely due to the need for attention or nurturance from others when compared to the NDY group.

The model for the Self-Perception Index was statistically significant ($p < .001$, $df = 3$, 76) for Sum Vista ($R^2 = .34$, $F = 13.14$), Form Dimension ($R^2 = .15$, $F = 4.31$), An+Xy

($R^2 = .16$, $F = 4.81$), Morbid ($R^2 = .14$, $F = 4.03$), and Reflection ($R^2 = .16$, $F = 4.81$).

With the exception of the nonsignificant differences found between the H-RA group and H-PA group for Morbid responses ($M = 4.56$, $SE = 2.39$, $p = .06$), Table C-5 shows the Self-Perception Index in which there were significant differences between the H-RA group and the remaining three groups on each of the scales ($p < .05$). There were no other significant distinctions noted among the groups in this Index.

The model for the Labile Index was statistically significant ($p < .05$, $df = 3$, 76) for Affective Ratio ($R^2 = .15$, $F = 2.99$), Cope ($R^2 = .14$, $F = 3.83$), Pure Color ($R^2 = .28$, $F = 5.10$), Explosion ($R^2 = .32$, $F = 11.83$), and Fire ($R^2 = .21$, $F = 4.20$). Table C-6 shows there is a statistically significant difference between the H-RA group and the remaining three groups for each of the determinants found in the Labile Index ($p < .05$). In addition, the H-PA group obtained a much lower score than the NDY group on the Explosion determinant ($MD = -2.06$, $SE = 1.00$, $p < .05$). These findings support the third hypothesis, which states individuals high in proactive aggression externalize while displaying few signs of emotions.

Lastly, the model for the Cognitive Index was statistically significant ($p < .05$, $df = 3$, 76) for Xminus ($R^2 = .12$, $F = 3.42$), Xunusual ($R^2 = .12$, $F = 3.58$), Lambda ($R^2 = .10$, $F = 2.77$), and Negative Movement ($R^2 = .16$, $F = 4.96$). Table C-7 shows the H-RA group was statistically significantly different from the HDY, H-PA, and NDY groups for the Xminus, Xunusual, and Negative Movement determinants. The difference in mean scores for Lambda also reached significance when comparing the H-RA group with the H-PA and NDY groups ($MD = -5.51$, $SE = 2.51$, $p < .05$ and $MD = -6.89$, $SE = 2.41$, $p < .05$ respectively), but not when comparisons were made between the H-RA and HDY

groups ($MD = 4.58$, $SE = 2.40$, $p = .06$). Again, these findings support the second hypothesis that the H-RA group would show more impairment when compared to other groups of delinquent youth on internal resources, such as their ability to accurately process incoming information and to perceive things as most other people.

Because the significant mean differences found between the H-RA group and the HDY, H-PA, and NDY groups on each of the four Rorschach Indexes were not always in the expected directions and were true for both healthy (e.g., Whole Human) and maladaptive responses (e.g., Food), these findings were considered unusual. Therefore, an Analysis of Variance (ANOVA) was computed in which the number of Rorschach responses was treated as the dependent variable and not as a covariate.

There was a significant difference between cluster membership and the number of Rorschach responses, with the H-RA group scoring significantly lower for the number of responses given than the HDY, H-PA, and NDY groups: $R^2 = .11$, $F(3, 76) = 3.16$, ($p < .05$). Table C-1 shows the frequencies and percentages for determinants per group. The H-RA and NDY groups obtained the highest frequencies for Pure Color (55% and 45%, respectively). In addition, the H-RA group obtained fewer total reflections responses (10%) than the HDY group (39%). Overall, the H-RA group had lower frequencies on nine of seventeen determinants when compared to the remaining groups. These individuals may have given too few responses to capture some of the differences between what is considered adaptive and maladaptive responses on the Rorschach.

In order to further understand these Rorschach data from a clinical sample, comparisons were made between a normal sample of 15-year-olds (Exner & Weiner, 1995) and the participants in this study (Mean Age = 15). Table C-2 shows the

Rorschach determinants that were two or more standard deviations greater for participants in this study when compared to the normative data. Although the majority of Rorschach determinants obtained by participants in this study were all within normal range for this age group, the following determinants were more frequently found in this clinical population than the normal population:

1. Pure Color was 2.73 times greater ($M = .44$, $SD = .81$) for delinquents when compared to the 15 year-olds in the normative data ($M = .003$, $SD = .16$)
2. Lambda was 3.90 times greater than ($M = 1.51$, $SD = 2.47$) the normative data ($M = .65$, $SD = .22$)
3. Xminus was 5.20 times greater than ($M = .33$; $SD = .14$) the normative data ($M = .07$, $SD = .05$)
4. Xunusual was 3.0 times greater than ($M = .32$, $SD = 1.10$) the normative data ($M = .14$, $SD = .06$).

VI. MUTUALITY OF AUTONOMY SCALES

MOA scales were examined next. Cohen's kappa was used to calculate percent agreement between two advanced psychology students who independently rated MOA Scales. Table D-1 shows these findings. When initially scoring the Rorschach protocols using this method, Scale 5 was divided into parts (a) and (b) to represent separate figures involved in parallel negative interaction. However, there were no records that met the criteria for Scale 5b. Therefore, Scale 5b as well as 6, which include separate figures with destructive imbalance in a serious attack such as being strangled or tortured, were omitted from Table D-1.

Chi Square statistics were completed by computing cross tabulations of MOA-7, (.00 = nonoccurrence and 1.00 = occurrence), by the four groups of aggression. MOA-7 revealed a significant difference between observed and expected frequencies of this response for participants with $\chi^2(1) = .88, p < .001$. The occurrence of MOA-7 was significantly less frequent than the nonoccurrence. In order to analyze the differences among the four groups on MOA-7, binary logistic regression analyses were computed.

Table D-3 shows cluster membership predicted the occurrence of MOA-7 as indicated by Wald $\chi^2(1, N = 80) = 31.36, p < .001$. The odds of having an occurrence on MOA-7 increased .08 times for the H-RA participants. These findings support the second hypothesis that individuals in the H-RA group appear significantly more impaired than other groups of delinquents on interpersonal relatedness. To further understand these findings, cross tabulations of MOA-7 as a function of cluster membership were computed. The frequency of the occurrence of MOA-7 for the H-RA group was 13.8%, while the occurrence of MOA-7 in the HDY, H-PA, and NDY groups was 28.8%, 26.3%, and 31.3% respectively. Although both the NDY and H-RA groups had only one occurrence on MOA-7, the NDY group obtained a higher percentage score. Therefore, the significant difference found between the H-RA and the remaining groups appear to be due to the H-RA group cell size.

A nonparametric MANCOVA was completed with the remaining MOA variables, which were ranked by cases because the data were not normally distributed. In addition, the number of Rorschach responses were weighted for each of the variables, and the general models were statistically significant ($df = 3, 76; p \leq .05$) for MOA-1 ($R^2 = .10, F = 2.82$); MOA-L ($R^2 = .10, F = 2.61$); and MOA-H ($R^2 = .12, F = 3.48$). In addition, the

MANCOVA yielded significant differences between MOA subscales and cluster membership. The mean score differences for the H-RA group were significantly lower than the HDY group for MOA-1 and MOA-H ($MD = -8.13$, $SE = 3.09$, $p \leq .5$ and $MD = -8.67$, $SE = 3.08$, $p \leq .05$ respectively). In addition, the H-RA group scores were significantly lower than the NDY group for each of the three subscales: MOA-1 ($MD = -6.32$, $SE = 3.04$, $p \leq .05$); MOA-L ($MD = -5.75$, $SD = 2.36$, $p \leq .05$); and MOA-H ($MD = -6.71$, $SE = 3.03$, $p < .05$) respectively. In addition, the H-PA group obtained significantly lower scores than the HDY group on the MOA-H subscale ($MD = -4.51$, $SE = 2.02$, $p \leq .05$). Although group membership was predictive of the MOA-7 scale, there were inconclusive findings when comparing the MOA-H scale as a function of cluster membership.

VII. MEDICAL RECORDS

The final statistical analyses conducted in this study included a series of binary logistic regressions on categorically coded dependent variables such as chemical dependency, crime, disorder, and the number of times a participant had been arrested. Table E-1 shows group membership for the H-PA and H-RA clusters was predictive of chemical use as indicated by Wald χ^2 (1, $N = 79$) = 10.14, $p < .001$. The odds of chemical use increased 4.62 times for H-PA participants and .42 times for the H-RA participants. These findings strongly support the third hypothesis that the H-PA individuals would score higher on externalizing problems than other groups of delinquent youth.

A participant's diagnosis, mood versus conduct disorder, was significant for the H-RA cluster ($p < .001$). Table E-2 shows the odds of being diagnosed with a conduct disorder increasing .19 times for these participants in comparison to members of other proactive and reactive aggressive groups. Due to the level of difficulty in intervening with individuals who have conduct disorder, these findings support the second hypothesis that the H-RA group would appear more maladjusted than other reactive and proactive groups of youth on personality assessments.

Table E-3 shows there was no statistically significant difference found between the types of crime committed and group membership. Therefore, the fourth hypothesis, which states participants in the HDY group would significantly differ from the other three groups on types of crime committed (violent versus non-violent), was not supported. However, cluster membership predicted the number of arrests, with the likelihood of the HDY participants having more than one arrest occurring .15 times more than members of the remaining groups ($p < .05$). This finding supports the notion that participants in the HDY group attempt to look normal on Internalizing and Externalizing dimensions when behavioral outcome measures (e.g., number of arrests) show significantly more maladaptive functioning.

VIII. GENDER COMPARISONS

The last hypothesis stated that female juvenile delinquents adjudicated for criminal activity would score higher on internalizing scales, and display more reactive aggression than males. Overall, these hypotheses were not supported in any of the above-referenced statistical computations in which gender was treated as a covariate of scales being

measured. There did not appear to be differences between males and females on Internalizing and Externalizing dimensions as a function of reactive or proactive cluster membership.

CHAPTER V DISCUSSION

I. FINDINGS

Through the collective use of reported symptomatology from juvenile delinquents and their parents, projective psychological testing, and medical records, important systematic differences were found among four groups of a clinical sample of youths on subtypes of aggression, including Neurotic Delinquent Youth (NDY), “Healthier” Delinquent Youth (HDY), High-Proactive Aggression (H-PA) youth, and High-Reactive Aggression (H-RA) youth.

Similar to previous research findings (Cornell et al., 1996; Day, Bream, & Pal, 1992; Crick & Dodge, 1996), results from this study support the utility of subtypes of reactive and proactive aggression. Proactive aggressors appeared more psychopathic, externalizing with little remorse or trepidation. Likewise, reactive aggressors’ test responses suggested disorganization and unregulated emotional arousal, which is believed to hinder relationship growth (Poulin & Boivin, 2000). Accordingly, aggression subtypes, such as the H-PA and H-RA groups, will impact youths’ peer status, social adjustment, and repetitive deviant patterns of behavior, with the H-PA group expected to be viewed as leaders associating with other individuals who also initiate criminal activity without provocation. Further, the quality of relationships will be worse for the H-RA group, which is less equipped in responding to negative exchanges and negotiating within human interactions (Day, Bream, & Pal 1992; Pellegrini, Bartini, & Brooks, 1999; Price

& Dodge, 1989; Poulin, Cillessen, Hubbard, Coie, & Schwartz, 1997; Coie, Dodge, Terry, & Wright, 1991).

The differences found between the groups of H-RA and HDY were more consistent and robust than other group comparisons in revealing important distinctions among delinquent youths. Similar to findings from Waschbusch, Willoughby, and Pelham (1998), the H-RA group was a mixed cluster of more globally disturbed and chaotic delinquent youths compared with the other groups, as assessed by personality measurements. For example, when considering hostile attributions, findings from this study appear similar to previous research (Yoon, Hughes, Cavell, & Thompson, 2000; Dodge & Coie, 1987, Hudley & Friday, 1996).

Based on Rorschach responses (Exner Comprehensive System), the H-RA group responded with significantly more inaccurate judgment of ambiguous percepts, leaving them susceptible to distorting events and to lacking adequate discernment of human interactions. Overall, these individuals appear considerably more unstable with an increased likelihood for poor functioning, maladaptive behaviors, unhealthy pathways or trajectories, and negative outcomes than the other groups studied.

Conversely, the assessment of the HDY cluster was similar to previously studied low reactive-proactive individuals, with the HDY group appearing more adjusted, having better relationships with their parents, wanting to achieve and not fail, and exhibiting control over impulsive and problematic behavior. However, if past criminal behavior predicts future behavior, as adults the outcome for members of the HDY group may include lengthier criminal records, with more arrests than the three remaining groups.

Although the greatest differences were found between the HDY and H-PA groups on most scales, the HDY group was most different from the H-PA group on the Failure to Achieve, Parent-Child Relations, and Unruly scales, with the least significant mean difference found between the HDY and H-PA groups for oppositional behavior. This finding was particularly noteworthy because of a possible link between these two groups in their proneness to resist rules and perform in ways contrary to what is expected of them by authority figures. Further investigation of this difference may help in understanding why a group of adolescents who appear socially acceptable on psychological tests experience significant legal problems. Perhaps, a certain level of shrewdness allowed existing psychological problems to be masked, thereby going undetected.

As expected, the H-PA group appears insistent on breaking rules with very little emotional turmoil or guilt when compared to the NDY group. Because of their psychological disposition and suspected coping styles, one might also expect a pattern of increased emotional problems for the NDY group and more behavioral problems for the H-PA group when they are faced with situational stressors and adverse environmental changes.

Lambert, Wahler, Andrade, and Bickman (2001) found that youths who exhibit conduct problems may possess both internalizing and externalizing characteristics of personality, and children with conduct disorders may use their misbehavior as a way of coping. This research is important in revealing the need to further investigate the different adjustments children make in order to manage their lives. While some internalizing children begin to externalize and are viewed as conduct disordered, other

youths exhibit few problems and more resiliency. Because the H-RA group appear mixed (high on Internalizing and Externalizing dimensions), it is speculated that future research, including the examination of the H-RA group, may find the coexistence of subtypes of aggression as discussed in the literature review (Vitaro, Gendreau, Tremblay, & Oligny, 1998; Cornell et al., 1996; Waschbusch, Willoughby, & Pelham, 1998).

In this study, there were several differences among the clusters of aggressive delinquents in terms of “object” relationships. MOA subscales produced significant findings for delinquent youths’ interpersonal functioning as noted by differences among the reactive and proactive groups. The MOA-7 subscale predicted H-RA group membership, while MOA-H scores were significantly different between the HDY and H-PA groups. The H-PA group gave considerably more poor human responses versus the HDY group when considering healthy human representation.

In addition to the comparisons made between the groups of reactive and proactive aggression across the Rorschach Indexes (Exner Comprehensive System), findings showed the NDY group obtained higher percentages than the three remaining groups for several determinants, including Sum Texture (55%) and Cooperation (36%), which is suggestive of this group’s need for affiliation and more social interactions. Moreover, the H-RA group gave fewer Whole Human responses (10%), and the H-PA group obtained the lowest percent for Food responses (12%), indicating poor interpersonal connectedness and perhaps little need or comfort in depending on others.

Although some of the variance did not reach significance, divergent patterns of relating in the world can be observed among these groups of delinquent youths, as they appear to have different needs and expectations when interacting with others. The H-RA

and H-PA groups are both expected to experience difficulty in seeking help from others because of their negative interpersonal experiences and mistrust of being vulnerable within relationships when compared to the NDY group, which is expected to show a greater need for affiliation.

There were no differences found among participants on intelligence, age, or gender as related to the four clusters of reactive and proactive aggression. This population's Full Scale IQ mean score was 93.79, which is slightly less than average. Moreover, although the research, which is based mostly on "normal" youths, shows females are typically studied less than males because they commit fewer and less serious offenses, court-referred delinquent females were believed to differ significantly from the "normal" population. However, the notion that these individuals score higher on measures assessing internalization and that they commit more crimes prior to gaining the attention of law enforcement officers did not hold true for this clinical sample.

The implications of the findings from this study appear important in guiding the treatment of youths who have considerable behavioral and emotional problems. Unlike most school-aged children, youths who are aggressive have the tendency to cause many difficulties for those around them at home and at school. These individuals have significantly more problems relating to their peers and poor outcome expectancies, especially the H-RA group which also perceives events much more negatively than others their age. The ability to categorize subtypes of aggression can facilitate treatment modalities offered to children and their families by mental health care providers. For example, findings show there is a statistically significant difference between NDY and H-PA youths in terms of diagnoses. This finding is useful for clinicians when considering

the type of treatment or combination of services (e.g., brief vs. extensive, individual vs. group vs. family, inpatient vs. outpatient, psychotropic medication) and recommendations for future care.

When providing mental health treatment to delinquent individuals, psychological findings suggestive of distinguishable differences among youths who offend could prove valuable in conceptualizing cases and choosing the most efficacious approach to treatment. Although all of the court-referred children in this study violated social norms, the NDY group may show better improvement with the use of psychotropic medication, while the H-PA group may show more benefit from a family or systemic approach with the inclusion of education for parents on how to deal with the increase in externalized, acting-out behaviors.

II. LIMITATIONS AND FUTURE RESEARCH

There were several limitations in this archival study of aggression subtypes among juvenile delinquents. Due to the lack of diversity, the generalizability of the findings was decreased. The group of participants were mostly Caucasian and from a rural area. This may have had a significant impact on the findings. The expectation is that more diverse populations, perhaps from metropolitan areas, may look somewhat different than the population studied. Because this was an archival study, participants were not available for clarification of portions of their history and medical records. These data were unable to be examined. For instance, there were three subjects who did not have information on the number of arrests and types of crime committed.

As discussed in a previous chapter, less than ten percent of the research articles on reactive and proactive aggression included youths with a record of delinquent behavior. In order to diversify the field of research and produce more generalizable findings, more youths with serious delinquency problems should be examined. Because participants in this study had not committed extremely violent crimes (e.g., assault with a weapon, murder), future studies should include delinquent youths with such offenses.

With this in mind, a longitudinal study should be conducted. Young offenders' criminal behavior may show differences in types of crime committed if studied through early adulthood, as differences in the number of arrests are already found among the groups. Whether or not these individuals' behavioral outcomes differ (e.g., education attainment, future incarceration, employment, and marital status/satisfaction) could also prove to be informative, especially in considering how best to intervene or provide services to this population.

Differences between reactive individuals who act out with serious offenses versus those who do not should also be explored. Whether or not some of these individuals see themselves as victims, "taking matters into their own hands," is of great concern because of the possible catastrophic nature of their acting out and the desire to provide them with assistance on how best to problem solve and deal with their self-perception as victims. Larger sample sizes and a control group consisting of "normal" participants should be considered. Finally, forms of intervention, with medication trials only, psychotherapy only, and combined interventions may demonstrate the utility of different types of treatment as a function of reactive and proactive aggression.

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APPENDICES

APPENDIX A:

Studies of Reactive and Proactive Aggression

Table A-1

Characteristics of Studies on Proactive and Reactive Aggression

Demographics	Studies	Percentages
Race		
Minority (only)	8	24.2
White (only)	2	6.1
Gender		
M (only)	24	54.5
Fe (only)	0	0.0
M and Fe	18	40.9
Population		
Normal youth	32	72.7
Delinquent youth	4	9.1
Normal adults	2	4.6
Delinquent adults	6	13.6

Note. Overall, there were 44 studies examined. Two of the articles did not specify participants' gender. In one study consisting of both males and females, 58 participants were male and only 2 participants were female.

Table A-2

Demographics of Studies on Proactive and Reactive Aggression

Demographics	Studies	Mode	Range
Age (Years)	17	15	5-32
Grade	27	3 rd	K-college
Date of publication	44	1998	1978-2001

Note. Several studies contained a range of ages and grades, producing some overlap. Mode was used to capture the most occurring characteristic. The frequencies for "date of publication" were counted for studies that were from different articles but not when several studies appeared in the same article. In such cases, the date was only counted once.

Table A-3

Aggression Subtypes and Abbreviated Items from Dodge and Coie (1987)

Aggression Subtype	Abbreviated Items
Reactive Aggression	4. When teased, strikes back 12. Blames others in fights 14. Overreacts angrily to accidents
Unclassified	2. Start fights with peers 6. Teases and name calls 9. Breakrules in games 10. Gets into verbal arguments 16. When frustrated, quick to fight 19. Responds negatively when fails
Proactive Aggression	11. Get others to gang up on a peer 13. Uses physical force to dominate 23. Threatens and bullies others

APPENDIX B:
YSR, SIPA, and MACI Tables by Cluster Membership

Table B-1

Between-Group Differences for Internal and External Clustering based on Scale Scores from the Youth Self-Report (YSR) and Millon Adolescent Clinical Inventory (MACI)

	Group 1		Group 2		Group 3		Group 4	
	(HDY)		(H-PA)		(NDY)		(H-RA)	
	(n = 23)		(n = 21)		(n = 25)		(n = 11)	
Measure	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Internal	-.52	2.44	-2.19	1.56	.96	1.43	3.10	1.50
External	-4.13	1.33	2.53	1.87	.06	1.28	3.70	1.35

Note. N=80. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression.

Table B-2

Intercorrelations for Scales Forming Cluster Membership and Five Other Scales from the Youth Self-Report (YSR)

Scales	1	2	3	4	5	6	7
1. Internalizing	--	.53**	.61**	.40**	.64**	.22**	.85**
2. Externalizing	.53**	--	.40**	.73**	.31**	.58**	.84**
3. Withdrawn	.61**	.40**	--	.57**	.67**	.48**	.55**
4. Aggressive Behavior	.40**	.73**	.57**	--	.66**	.64**	.61**
5. Anxious-Depressed	.64**	.31**	.67**	.64**	--	.34**	.50**
6. Delinquent Behavior	.22**	.58**	.48**	.64**	.34**	--	.42**
7. Total Problems	.85**	.84**	.55**	.61**	.50**	.42**	--

Note. Internalizing and Externalizing were used in forming cluster membership, while the remaining scales were used as dependent variables in the data analysis.

** $p < .01$.

Table B-3

Mean Difference and Standard Error Results for YSR Scales as a Function of Reactive and Proactive Cluster Membership

Cluster Membership	Withdrawn			Aggression			Anxi-Dep			Delinq			Total Problems		
	<u>MD</u>	<u>SE</u>		<u>MD</u>	<u>SE</u>		<u>MD</u>	<u>SE</u>		<u>MD</u>	<u>SE</u>		<u>MD</u>	<u>SE</u>	
HDY	-98	2.42		-10.85*	2.64		1.42	2.89		-13.15	3.17		-11.35*	2.47	
	-3.26	2.32		-6.37*	2.53		-5.32	2.76		-6.11*	3.04		-11.98*	2.37	
	-10.62*	2.94		-13.97*	3.21		-10.96*	3.50		-14.00*	3.85		-19.12*	3.00	
H-PA	-2.28	2.37		4.79	2.59		-6.74*	2.83		7.04*	3.11		-.63	2.43	
	-9.69*	2.98		-3.13	3.26		-12.38*	3.56		-.85	3.91		-7.77*	3.05	
NDY	-7.42*	2.90		-7.60*	3.17		-5.64	3.46		-7.89*	3.80		-7.14*	2.97	

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Redundant scores were omitted from the table. MD = Mean Difference.

*p < .05.

Table B-4

Mean Difference and Standard Error Results for SIPA Scales as a Function of Reactive and Proactive Cluster Membership

Cluster Membership	Lability		Isolation		Failure to Achieve		Guilt		Parent-Child Relations	
	<u>MD</u>	<u>SE</u>	<u>MD</u>	<u>SE</u>	<u>MD</u>	<u>SE</u>	<u>MD</u>	<u>SE</u>	<u>MD</u>	<u>SE</u>
HDY	-20.73*	6.41	-6.41	6.14	-16.27*	6.13	-8.39	7.21	-20.75*	6.34
	-13.55*	6.14	-1.57	5.89	-14.57*	5.87	-14.63*	6.90	-12.81*	6.07
	-26.64*	7.79	-7.77	7.46	-11.93	7.45	-11.73	8.75	-16.83*	7.70
H-PA	7.19	6.29	4.85	6.02	1.70	6.01	-6.24	7.07	7.94	6.22
	-5.91	7.91	1.35	7.57	4.35	7.56	-3.34	8.89	3.91	7.82
NDY	-13.10	7.69	-6.20	7.36	2.65	7.35	2.90	8.64	-4.02	8.60

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Redundant scores were omitted from the table. MD = Mean Difference.

* $p < .05$.

Table B-5

Intercorrelations between Scales forming Reactive and Proactive Cluster Membership and Five Other Scales from the Millon Adolescent Clinical Inventory (MACI)

Scales	1	2	3	4	5	6	7	8	9	10	11
1. Substance Abuse	--	.52**	.73**	-.69**	.25*	.52**	.61**	.57**	-.66**	.69**	.43**
2. Delinquency	.55**	--	.65**	-.65**	-.34**	.02	.73**	.64**	-.43**	.32**	-.21
3. Impulsivity	.73**	.65**	--	-.67**	.18	.44**	.72**	.80**	-.69**	.69**	.30
4. Anxious	-.69**	-.65**	-.67**	--	-.07	-.33**	-.57**	-.55**	.61**	-.53**	-.20
5. Depressed	.25*	-.34**	.18	.07	--	.68**	-.18	-.03	-.29**	.46**	.84**
6. Suicidal	.52*	.02	.43**	-.33**	.68**	--	.04	.30**	-.55**	.67**	.76**
7. Unruly	.61**	.73**	.76**	-.57**	-.18	.04	--	.75**	-.53**	.47**	-.03
8. Forceful	.57**	.64**	.80**	-.55**	-.03	.30**	.75**	--	-.63**	.58**	.12
9. Conformity	-.66**	-.43**	-.69**	.61**	-.29**	-.55**	-.53**	-.63**	--	-.67**	-.44**
10. Oppositional	.69**	.32**	.69**	-.53**	.46**	.67**	.47**	.58**	-.67**	--	.62**
11. Devaluation	.43**	-.21	.34**	-.20	.84**	.76**	-.03	.12	-.44**	.62**	--

Note. Substance Abuse, Delinquent Predisposition, and Impulsive Propensity were the externalizing scales used to form the Proactive and Reactive Clusters, while Anxious, Depressed, and Suicidal were the internalizing scales used to form the four groups. The remaining scales were used as dependent variables in the analysis of the data.

* $p < .05$.

** $p < .01$.

Table B-6

Mean Difference and Standard Error Results for MACI Scales as a Function of Proactive and Reactive Cluster Membership

Cluster Membership	Unruly			Forceful			Conformity			Oppositional			Devaluation		
	MD	SE		MD	SE		MD	SE		MD	SE		MD	SE	
H-DY															
H-PA	-34.84*	5.27		-32.77*	5.67		-18.01*	4.34		-18.26*	4.67		-2.38	5.63	
NDY	-18.18*	5.05		-17.56*	5.42		-17.15*	4.15		-20.98*	4.47		-28.08*	5.39	
H-RA	-26.88*	6.40		-39.05*	6.88		39.44*	5.27		-36.78*	5.67		-40.09*	6.84	
H-PA															
NDY	16.66*	5.17		15.21*	5.56		-.87	4.26		-2.72	4.58		-25.70*	5.52	
H-RA	7.96	6.50		-6.28	6.99		21.42*	5.35		-18.52*	5.76		-37.71*	6.94	
NDY															
H-RA	-8.70	6.32		-21.49*	6.79		22.29*	5.20		-15.80*	5.60		-12.01	6.75	

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Redundant scores were omitted from the table. MD = Mean Difference.

*p < .05.

APPENDIX C:

Exner Comprehensive System by Cluster Membership

Table C-1

Frequency and Percentage Responses of the Rorschach (Exner Comprehensive System)
as a Function of Reactive and Proactive Cluster Membership

Determinants	Group 1		Group 2		Group 3		Group 4		Total
	(HDY)		(H-PA)		(NDY)		(H-RA)		
	(n = 23)		(n = 21)		(n = 25)		(n = 11)		
	F	%	F	%	F	%	F	%	
Pure Color	12	37	7	22	9	28	4	13	32
Sum Texture	0	00	0	00	6	55	5	45	11
Sum Vista	2	28	3	43	2	29	0	00	7
Form Dimension	37	37	21	20	33	33	10	10	101
Whole Human	70	32	51	24	72	34	21	10	214
Explosion	3	43	1	14	3	43	0	00	7
Food	4	23	2	12	7	41	4	24	17
Fire	9	25	7	8	12	33	8	22	36
Aggression	13	26	13	26	16	32	8	16	50
Cooperation	16	26	19	31	22	36	4	7	61
Morbid	20	23	26	31	23	27	16	19	85
Fr + rF	20	39	7	14	19	37	5	10	51
An + Xy	10	16	14	23	27	43	11	18	62

Note: HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Determinants calculated in decimal form were not included in this table.

Table C-2

Delinquent Youth and Normative Means and Standard Deviations for Responses on the Rorschach (Exner Comprehensive System)

Determinants	<u>Delinquent Youth</u>		<u>Norms (15 year-olds)</u>		
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>MD</u>
Number of Responses	21.78	9.42	21.94	4.21	.15
Interpersonal Index					
Sum Texture	.14	.50	1.06	.51	-.92
Whole Human	2.68	2.89	3.42	1.96	-.74
Food	.23	.64	.30	.51	-.07
Aggression	.63	1.16	1.14	.91	-.51
Cooperation	.79	.92	1.54	.97	-.75
Isolation	.21	.15	.15	.07	.06
Self-Perception Index					
Sum Vista	.09	.33	.18	.49	-.09
Form Dimension	1.26	1.70	1.33	.97	-.07
Anatomy	.69	1.16	.43	.79	.26
Xray	.06	.29	.04	.19	.02
Morbid	1.06	1.25	.54	.83	.52
Fr + rF	.66	.16	.50	.45	.16
Labile Index					
Affective Ratio	.44	.16	.65	.22	-.22
Pure Color	.44	.81	.003	.16	.44*
Cope	-.13	1.17	1.54	.97	1.41
Explosion	.09	.28	.12	.32	-.19
Fire	.54	.78	.69	.52	-.15
Cognitive Index					
Xminus	.33	.14	.07	.05	.26*
Xunusual	.32	1.10	.14	.06	.18*
Lambda	1.51	2.47	.65	.22	.86*
Negative Movement	.21	2.23	.54	.83	-.33

Note. M = Mean. SD = Stand Deviation. MD = Mean Difference. An asterisk was placed by the Mean Difference score for determinants that were two or more standard deviations above the mean of the normed group.

Table C-3

Percent Agreement and Kappa Reliability for Rorschach (Exner Comprehensive System)
Determinants

Determinants	Agreement	Expected Agreement	Kappa	Std. Error
Interpersonal Index				
Texture	95.00	77.25	.78	.17
Whole Human	90.00	22.00	.87	.11
Food	100.00	82.00	1.00	.22
Aggression	85.00	49.75	.70	.15
Cooperation	80.00	37.50	.68	.16
Isolation	75.00	4.75	.74	.05
Self-Perception Index				
Vista	90.00	90.00	.00	-
Form Dimension	80.00	36.75	.68	.15
An+Xy	80.00	35.75	.69	.14
Morbid	90.00	29.00	.86	.14
Fr + rF	100.00	43.50	1.00	.16
Labile Index				
Affective Ratio	100.00	7.50	1.00	.06
Pure Color	95.00	53.25	.89	.19
Cope	85.00	53.75	.68	.12
Explosion	100.00	74.50	1.00	.22
Fire	100.00	46.00	1.00	.18
Cognitive Index				
Xminus	75.00	6.25	.73	.06
Xunusual	65.00	8.75	.62	.07
Lambda	75.00	5.25	.74	.05
Neg. Movement	80.00	38.50	.67	.16

Note. Agreement and Expected Agreement scores are reported in percentages of actual agreement and agreement expected at chance levels.

Table C-4

Mean Difference and Standard Error Results for Ranked Rorschach Determinants (Exner Comprehensive System) in the Interpersonal Index as a Function of Reactive and Proactive Cluster Membership

Cluster	Membership	Interpersonal Index											
		Sum Texture			Whole Human			Food			AGG		
		MD	SE		MD	SE		MD	SE		MD	SE	
HDY	H-PA	1.00	.96		.68	1.97		2.25	1.50		2.04	1.63	
	NDY	-2.53*	.90		-.99	1.85		-.87	1.40		-.90	1.52	
	H-RA	6.03*	1.17		7.19*	2.41		7.21*	1.83		7.00*	1.99	
H-PA	NDY	-3.52*	.97		-1.68	1.99		-3.12*	1.52		-2.94	1.64	
	H-RA	5.03*	1.23		6.51*	2.53		4.97*	1.92		4.96*	2.08	
NDY	H-RA	8.56*	1.18		8.19*	2.43		8.08*	1.85		7.89*	2.00	
Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Model weighted by number of responses. Redundant scores were omitted from the table. MD = Mean Difference.													
*p<.05.													

Table C-5

Mean Difference and Standard Error Results for Ranked Rorschach Determinants (Exner Comprehensive System) in the Self-Perception Index as a Function of Reactive and Proactive Cluster Membership

Cluster Membership	Self-Perception Index									
	Sum Vista		Form Dimension		An+Xy		Morbid		Fr+Tf	
	MD	SE	MD	SE	MD	SE	MD	SE	MD	SE
HDY										
H-PA	.13	.81	1.31	1.90	.60	1.80	1.35	1.87	2.35	1.67
NDY	-1.11	.76	-.66	1.78	-2.52	1.68	-1.90	1.75	.20	1.56
H-RA	5.79*	.99	7.38*	2.32	5.84*	2.20	5.91*	2.21	7.14*	2.04
H-PA										
NDY	-1.24	.82	-1.97	1.92	-3.12	1.82	-3.25	1.89	-2.15	1.68
H-RA	5.66*	1.04	6.07*	2.44	5.24*	2.30	4.56	2.39	4.79*	2.13
NDY										
H-RA	6.90*	1.00	8.04*	2.34	8.36*	2.21	7.81*	2.39	6.94*	2.05

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Model weighted by number of responses. Redundant scores were omitted from the table. MD = Mean Difference. *p<.05.

Table C-6

Mean Difference and Standard Error Results for Ranked Rorschach Determinants (Exner Comprehensive System) in the Labile Index as a Function of Reactive and Proactive Cluster Membership

Cluster		Labile Index											
		Affective Ratio				Cope				Pure Color			
		MD	SE			MD	SE			MD	SE	MD	SE
Membership													
HDY	H-PA	.38	1.96			.77	1.77			.09	1.48	1.19	1.03
	NDY	-1.42	1.87			-1.16	1.68			-1.61	1.41	-.87	.98
	H-RA	5.44*	2.36			5.79*	2.13			5.19*	1.78	6.17*	1.25
H-PA	NDY	-1.79	1.90			-1.92	1.71			-1.70	1.43	-2.06*	1.00
	H-RA	5.97*	2.37			5.03*	2.43			5.10*	1.80	4.98*	1.25
NDY	H-RA	6.86*	2.31			6.95*	2.08			6.80*	1.75	7.04*	1.22
												6.84*	1.94

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Model weighted by number of responses. Redundant scores were omitted from the table. MD = Mean Difference.

* $p < .05$.

Table C-7

Mean Difference and Standard Error Results for Ranked Rorschach Determinants (Exner Comprehensive System) in the Cognitive Index as a Function of Reactive and Proactive Cluster Membership

Cluster Membership	Cognitive Index							
	Xminus		Xunusual		Lambda		Neg. Movement	
	MD	SE	MD	SE	MD	SE	MD	SE
HDY	1.40	1.98	.32	1.94	-.93	1.96	1.65	1.88
	.13	1.86	-2.11	1.82	-2.27	1.83	-1.54	1.76
	7.26*	2.42	5.70*	2.37	4.58	2.40	7.15*	2.30
H-PA	-1.28	2.00	-2.43	1.96	-1.34	1.98	-3.19	1.90
	5.86*	2.54	5.38*	2.49	5.51*	2.51	5.51*	2.41
NDY	7.14*	2.44	7.81*	2.39	6.85*	2.41	8.69*	2.32

Note: HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. Model weighted by number of responses. Redundant scores were omitted from the table. MD = Mean Difference.

* $p \leq .05$.

APPENDIX D:
Tables of MOA Scales

Table D-1

Percent Agreement and Kappa Reliability for MOA Scales

	Agreement	Expected Agreement	Kappa	Std. Error
Scale 1	80.00	43.75	.64	.17
Scale 2	85.00	21.25	.81	.11
Scale 3	95.00	78.00	.77	.21
Scale 4	95.00	62.50	.87	.17
Scale 5a	90.00	50.25	.80	.16
Scale 7	100.00	82.00	1.00	.22

Note. Agreement and Expected Agreement scores are reported in percentages of actual agreement and agreement expected at chance levels.

Table D-2

Intercorrelations for MOA Subscales

Scale	1	2	3
1. MOA -1	--	.08	.43**
2. MOA-L	.08	--	.53**
3. MOA-H	.43**	.53**	--

Note. N=80. MOA = Urist Mutuality of Autonomy scale; MOA-1 = total number of MOA scale Score 1 in a given protocol; MOA-L = MOA single lowest score (least disturbed-most adaptive); MOA-7 = total number of MOA scale Score 7 in a given protocol; MOA-H = MOA single highest score (most disturbed-least adaptive). HDY = Healthier Delinquent Youth. H-PA = High- Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression.

**p < .01.

Table D-3

Binary Logistic Regression Analysis Summary for Reactive and Proactive Cluster Membership Predicting Occurrence of MOA-7 Scale

Cluster	B	SE	Odds Ratio	Wald Statistic
HDY	.10	1.05	1.11	.01
H-PA	-.88	1.15	.42	.58
NDY	.29	1.16	1.34	.06
H-RA	-2.52	.45	.08	31.36***

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. By default, participants grouped into the H-RA group were used as the reference group.

*** $p < .001$.

Table D-4

Mean Difference and Standard Error Results for Ranked MOA Subscales as a Function of Cluster Membership

Membership		Scales					
		MOA -1		MOA-L		MOA-H	
		MD	SE	MD	SE	MD	SE
HDY	H-PA	3.80	2.01	2.08	1.56	4.51*	2.02
	NDY	1.81	1.85	.52	1.43	1.96	1.84
	H-RA	8.13*	3.09	6.27	2.39	8.67*	3.08
H-PA	NDY	-2.00	1.94	-1.56	1.50	-2.55	1.93
	H-RA	4.33	3.15	4.19	2.44	4.16	3.13
NDY	H-RA	6.32*	3.04	5.75*	2.36	6.71*	3.03

Note. N=80. MOA = Urist Mutuality of Autonomy scale; MOA-1 = total number of MOA scale Score 1 in a given protocol; MOA-L = MOA single lowest score (least disturbed-most adaptive); MOA-7 = total number of MOA scale Score 7 in a given protocol; MOA-H = MOA single highest score (most disturbed-least adaptive). HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression.

* $p < .05$.

APPENDIX E:

Binary Logistic Regression Analyses for Chemical Use, Diagnosis, Arrests, and Crime Types

Table E-1

Binary Logistic Regression Analysis Summary for Reactive and Proactive Cluster Membership Predicting Chemical Use

Cluster	B	SE	Odds Ratio	Wald Statistic
HDY	1.39	.89	4.00	2.43
H-PA	1.53	.60	4.62	6.57**
NDY	.92	.69	2.50	1.79
H-RA	-.87	.29	.42	9.25**

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. By default, participants grouped into the H-RA group were used as the reference group.

** $p < .01$.

Table E-2

Binary Logistic Regression Analysis Summary for Reactive and Proactive Cluster Membership Predicting Diagnosis

Cluster	B	SE	Odds Ratio	Wald Statistic
HDY	1.06	.89	2.89	1.42
H-PA	-1.49	1.29	.23	1.34
NDY	-.11	.96	.90	.01
H-RA	-1.64	.37	.19	20.02***

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. By default, participants grouped into the H-RA group were used as the reference group.

*** $p < .001$.

Table E-3

Binary Logistic Regression Analysis Summary for Reactive and Proactive Cluster Membership Predicting Crime Type

Cluster	B	SE	Odds Ratio	Wald Statistic
HDY	-.19	.62	.83	.10
H-PA	.83	.55	2.29	2.27
NDY	-.05	.72	.95	.01
H-RA	.26	.26	1.30	1.06

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. By default, participants grouped into the H-RA group were used as the reference group.

* $p < .05$.

Table E-4

Binary Logistic Regression Analysis Summary for Reactive and Proactive Cluster Membership Predicting the Number of Arrests

Cluster	B	SE	Odds Ratio	Wald Statistic
HDY	-1.86	.87	.16	4.52*
H-PA	-.79	.83	.46	.90
NDY	-1.14	.83	.32	1.89
H-RA	-.25	.27	.78	.89

Note. HDY = Healthier Delinquent Youth. H-PA = High-Proactive Aggression. NDY = Neurotic Delinquent Youth. H-RA = High-Reactive Aggression. By default, participants grouped into the H-RA group were used as the reference group.

* $p < .05$.

VITA

Rosine Christmas was born during the summer of 1972 in Plymouth, North Carolina. She is the younger of two girls raised by working class parents. Her extended family includes 17 aunts and uncles and a host of cousins with whom she played tag, kickball, house, and school. As an adolescent, she realized in order to have money she had to work hard for it by doing well in school and finding odd jobs. She received her first paying job when she was in junior high mowing the lawn for a neighbor who insisted on calling her "Rock."

After graduating from high school, Rosine attended a small historically black university, Elizabeth City State. She was in the Honors Program and graduated Magna Cum Laude. She later pursued a Master's Degree in Educational Psychology at the University of Minnesota. There she learned invaluable lessons on surviving cold temperatures and blizzard-like conditions. She finished her program, and sought jobs that challenged her clinical abilities in much warmer climates.

In 1997, Rosine landed what she considers her first professional position working as a staff psychologist with juvenile sex offenders. One year later she decided to pursue a doctorate degree in the field of clinical psychology. She applied at the University of Tennessee and was accepted. In addition, she was accepted by the Federal Bureau of Investigations (FBI) for a summer position as an Honors Intern the following summer. A few years later, she began working as a predoctoral psychological trainee with incarcerated men at the Federal Medical Center (FMC) Rochester, Minnesota. The rest is history in the making.

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