

Utah State University

DigitalCommons@USU

---

All Graduate Theses and Dissertations

Graduate Studies

---

5-2007

## A Comparison of Cognitive Autonomy in Adolescents from a Residential Treatment Center and a Traditional Public High School

Matthew Laurence Reiser  
*Utah State University*

Follow this and additional works at: <https://digitalcommons.usu.edu/etd>



Part of the [Social and Behavioral Sciences Commons](#)

---

### Recommended Citation

Reiser, Matthew Laurence, "A Comparison of Cognitive Autonomy in Adolescents from a Residential Treatment Center and a Traditional Public High School" (2007). *All Graduate Theses and Dissertations*. 2585.

<https://digitalcommons.usu.edu/etd/2585>

This Thesis is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact [digitalcommons@usu.edu](mailto:digitalcommons@usu.edu).



A COMPARISON OF COGNITIVE AUTONOMY IN ADOLESCENTS  
FROM A RESIDENTIAL TREATMENT CENTER AND  
A TRADITIONAL PUBLIC HIGH SCHOOL

by

Matthew Laurence Reiser

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family, Consumer, & Human Development

© Matthew Laurence Reiser 2007

All Rights Reserved

## ABSTRACT

A Comparison of Cognitive Autonomy in Adolescents from a Residential Treatment  
Center and a Traditional Public High School

by

Matthew Laurence Reiser, Master of Science

Utah State University, 2007

Major Professor: Dr. Troy E. Beckert, Ph.D  
Department: Family, Consumer, and Human Development

The purpose of this study was to examine the extent to which factors influencing cognitive autonomy differed for “identified” and “not identified” troubled adolescents. One hundred and nineteen residential treatment youth aged 14 to 18 and 137 public high school adolescents were compared using the *Cognitive Autonomy Self Evaluation (CASE)* inventory, which examines five elements of cognitive autonomy including evaluative thinking, voicing opinions, decision making, self-assessing, and comparative validation. Findings reveal that generally cognitive autonomy did not differ according to troubled status. However, ninth-grade females at the traditional public high school rated themselves much higher in evaluative thinking, voicing opinions, decision-making, and self-assessing than the ninth-grade females at the residential treatment center. Implications for these findings and further recommendations were also discussed.

(82 pages)



## ACKNOWLEDGMENTS

I owe a large debt of gratitude to my advisor, Troy Beckert. He has graciously given of his time and efforts, and was willing to offer advice, counsel, and revisions as many different challenges were encountered during this project. Troy has been able to guide me through my writing and helped to polish this work in many ways. He has personally given much of his time to revise writings, collect data, and oversee the research for this thesis.

I appreciate Tom Lee and Brian Higginbotham for their willingness to serve on my thesis committee. Their suggestions and guidance have also been of great worth, taking this body of research and helping me to push through and finish.

I am also grateful for the teachers, educators, administrators, and employees who allowed us to collect data and conduct our study. I also want to thank the adolescents who were a part of this research for their willingness to complete the inventory and provide us with this valuable research.

Last of all I would like to thank my family, especially my wife, JaNae, for encouragement and support in helping me to complete this thesis. I'd like to thank my Heavenly Father for inspiration and the support in the busy life of a graduate student.

Matthew Laurence Reiser

# CONTENTS

v

	Page
ABSTRACT.....	iii
ACKNOWLEDGMENTS .....	iv
LIST OF TABLES.....	vii
CHAPTER	
I    INTRODUCTION.....	1
II   LITERATURE REVIEW.....	3
Introduction.....	3
Troubled Adolescents .....	3
Why Study Cognitive Autonomy?.....	9
Areas of Cognitive Autonomy.....	10
Residential Treatment Center .....	21
Conclusion .....	23
III  METHODS .....	26
Research Design.....	26
Sample.....	26
Data Collection .....	27
Measurement.....	31
Validity and Reliability.....	34
Data Analysis .....	34
IV  RESULTS .....	36
Reliability.....	36
Research Questions.....	37
V   DISCUSSION .....	49
Gender Differences.....	49
Grades, Reading, and Computer Use.....	50
Theoretical Implications .....	52
Limitations .....	55
Recommendations for Future Research and Final Comments.....	56

REFERENCES .....	58
APPENDIX.....	70

## LIST OF TABLES

vii

Table	Page
1	Demographic Total Frequencies of All Participants from Both Subgroups .....28
2	Coefficient Alphas (Cronbach's Alpha) of Reliability for Each <i>CASE</i> Inventory Scale for Scores From Each Group of Adolescent Respondents .....37
3	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Ninth-Grade Male and Female Participants from a Traditional Public High School and a Residential Treatment Center .....38
4	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for 11th Grade Male and Female Participants from a Traditional Public High School and a Residential Treatment Center .....40
5	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported Above Average Grades .....42
6	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported Average or Below Average Grades .....43
7	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported 0 to 3 Hours of Weekly Reading Time .....44
8	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported 3 or More Hours of Weekly Reading Time .....45
9	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported 0 to 3 Hours of Weekly Computer Use .....46
10	Mean Scores and Standard Deviations of the <i>CASE</i> Inventory for Males and Females Who Self-Reported 3 or More Hours of Weekly Computer Use .....48

## CHAPTER I

### INTRODUCTION

Correcting externalizing negative behaviors in adolescents remains frustrating for adults. While social scientists have spent a great deal of time documenting patterns of troubled behavior, little has been done to quantify the underlying structure of thought in the teens themselves. The problematic nature of troubled youth has garnered the attention of social science research as adults attempt to dissuade young people from poor decision-making leading to negative consequences.

A narrative analysis of behaviorally troubled adolescents' life stories showed that both groups of male and female participants experienced difficulties attaining educational, employment, and relational successes (Sanderson & McKeough, 2005). Adolescents are often characterized as poor decision-makers by teachers, parents, and policymakers who point to teen pregnancy, drug use, and delinquency as evidence of faulty judgment (Jacobs & Klaczynski, 2002). Despite widespread interest in the decisions adolescents make and numerous programs to improve their decision-making, little research has focused on the basic processes that underlie the development of judgment and decision-making (Jacobs & Klaczynski).

Decision-making is a factor in troubled adolescents that has been under explored. Explanations for troubled adolescents include gender as a factor (Fleming, 2005), environmental factors (Farrington, 2004), and interpersonal factors (Lytton, 1995). Establishing a direct causal link to any one of these factors has been illusive. However, one element of development that influences or is influenced by all of these might offer

some promise. The degree to which adolescents think for themselves merits additional consideration.

Many adolescents exhibit an inability to understand the consequences of their poor decisions. In general, adolescents do not possess the same level of cognitive ability as adults to make the best informed decision in many situations (Gardner, Sherer, & Tester, 1989). But how do adolescents differ in their ability to think independently? Is it possible there is a difference in how "identified" troubled adolescents think and reason when compared to "not-identified" troubled adolescents? Because of the difficulty in differentiating troubled adolescents for the purposes of this study "identified" troubled adolescents was operationally defined as youth who reside in a residential treatment center for assistance.

Little empirical evidence illuminates how thinking abilities differ between "identified" and "not-identified" troubled adolescents. In fact, little attention has been given to the development of independent thought among adolescents in general. The present study addresses decision processes in cognitive autonomy by comparing adolescents in a residential treatment center with adolescents from a traditional public high school.

The purpose of this study was to determine the extent to which elements of cognitive autonomy differ for identified troubled adolescents when compared to adolescents not identified as troubled adolescents.

## CHAPTER II

### LITERATURE REVIEW

#### Introduction

This chapter reviewed literature on troubled adolescents from multiple theoretical perspectives and addressed different factors that are associated with troubled adolescents. Because of the challenge in identifying troubled adolescents in a natural environment for the purposes of this study troubled adolescents were identified by participation in a residential treatment center. Cognitive autonomy is a new idea in research and, therefore, literature is scant. However, a close look at the literature on troubled adolescents and their decision-making abilities will assist in creating a clearer picture of the need for the current study. A review of variations in gender, age, environmental, and interpersonal factors were explored first. Next the characteristics of residential treatment centers were presented. Finally this chapter concluded with a review of literature associated with areas of adolescent independent thought that pertain to this study.

#### Troubled Adolescents

Trouble in adolescence includes varying degrees of problem behavior from less serious status offenses (truancy, possession of alcohol or tobacco, running away) to more serious index offenses (rape, murder, robbery, arson, and aggravated assault; Bourduin & Henggeler, 1990). Poor or bad decisions have also resulted in almost one-half of the youth in this country engaging in problem behaviors like substance abuse, school failure,

delinquency, or early, unprotected sexual behaviors (Bogenschneider, Small, & Riley, 1990).

Historically, helping adults have tried to get to the bottom of what can be done to rectify this societal predicament. Correctional educators are confronted with many important issues as they plan programs for adolescents in trouble (Sanger, Long, Ritzman, Stofer, & Davis, 2004). One study of behavior in troubled adolescents found that students who began using alcohol, cigarettes, or marijuana in elementary school were up to five times more likely than their peers to use these substances when they were in middle school (Prevention More Effective, 2002). In 2002, The Office of Juvenile Justice and Delinquency Prevention (OJJDP) released a report that indicated that higher frequencies of younger adolescents (10-13) are in the juvenile justice system as of 1998 than in the previous ten years (OJJDP, 1999). Many wonder why adolescents are getting into increasingly serious trouble with the law at an earlier age than before. There are a number of programs and agencies that are attempting to address these negative behaviors, but little has been done to explore the thought processes of troubled adolescents.

Endorsement of social norms and conventions with strong social ties are associated with decreased negative behaviors (Gottfredson, Harmon, Gottfredson, Jones, & Celestin, 1996; Loeber & Dishion, 1983; McCord, 1979). Some researchers have pointed out that a certain degree of risk taking is recognized to be a normal part of adolescent development (Baumrind, 1983). Even though a certain degree of risk-taking may be considered normal, many troubled adolescents commit crimes with astonishing nonchalance, devoid of emotional display (Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001). Individual characteristics such as neuropsychological and personality



characteristics have been linked to problem behavior (Allen et al., 2002; Ge, Donnellan, & Wenk, 2001; Moffitt, 1993; Thomas & Chess, 1984; Vermeiren, Schwab-Stone, Ruchkin, Clippele, & Deboutte, 2002; White, Bates, & Buyske, 2001). Impairments of the executive cognitive functions promote aggressive and under-controlled behavior (Hoaken, Giancola, & Pihl, 1998; Moffitt; Seguin, Pihl, Harden, Tremblay, & Boulterice, 1995; Vermeiren et al.). Executive cognitive functions manage such operations as attention control, abstract reasoning, working memory, goal selection, and strategic planning; reasonably, executive impairments may mediate neurological disorders such as ADD/ADHD or incapacity to delay gratification (Hoaken et al.; Moffitt; Seguin et al.; Vermeiren et al.). Cognitive deficits affect one's ability to solve social problems, disrupt interpersonal relations due to an impaired ability to generate alternative solutions to problems, inhibit aggression, and to restrict appropriate response to environmental cues (Loeber & Hay, 1997; White et al.). A further examination of how troubled adolescents think seems warranted.

This section has included some research in the area of troubled adolescents and reveals a link to negative risk taking behaviors and poor decision making. Identifying differences in independent thought relative to troubled youth is a logical step in understanding problem behavior.

#### *Gender and Age Issues Associated with Troubled Youth*

Researchers suggest there are gender differences with regard to decision-making, risk taking, and troubled youth. Some of the most salient areas of difference include substance use, sexual activity, and self-efficacy.

Generally speaking males are more likely than females to decide to participate in adolescent substance abuse. Rodhama and colleagues found that males were more likely than females to have participated in drinking and drug use (Rodhama, Hawton, Evans, & Weatherall, 2005). While more females reported smoking, males were more likely to be heavy smokers (Rodhama et al.).

The teenage pregnancy rate in the United States is one of the highest among developed nations and an estimated 82% of these pregnancies are unintended (Allan Guttmacher Institute, 2006). Approximately 29% of adolescent pregnancies in the United States result in abortion, while 57% of adolescent pregnancies result in live births (Allan Guttmacher Institute). Adolescent sexuality and related consequences have become common decision making issues for most adolescents. Even though males and females are both responsible for adolescent sexuality, it is often the female that deals with the consequences of teenage pregnancy. Gottfredson and Hirschi (1990) have suggested that people lacking self-control are impulsive, shortsighted, lacking in diligence and tenacity, and unconcerned with the pain and suffering they create for others. A lack of self-control may cause some adolescents to engage in risky behaviors where other adolescents with self-control choose not to participate.

Bandura (1997) highlighted the importance of self-efficacy in adolescence. The importance of this construct for behaviorally troubled adolescents was underscored in a study that reported differences between gender groups in views of self, with females often describing themselves as victims, whereas males views were often characterized by self-efficacy stemming from successful completion of criminal or violent acts – in other words, as victimizers (Sanderson & McKeough, 2005).

Adolescence is second only to infancy for dramatic bio-psychosocial transformations. And because infants cannot cognitively categorize and comprehend the impact of these changes, adolescence represents a most dramatic time period for change (Baumrind, 1987). Researchers have found that the part of the brain that considers risks, makes judgments, and controls impulsive behaviors is still developing during the teenage years (Caskey & Ruben, 2003). Thus it is possible that age might be the best predictor of successful decision-making and autonomous thought.

This literature on gender differences and age calls attention to the need of examining cognitive processes by gender and age. Litenberg (1987) and Henggeler (1989) claimed that being male is a factor of being "at-risk" for troubled adolescence. Males live "in a society that glorifies violence, power, winning, and makes cultural heroes out of the 'cool and lawless'" (Litenberg, p. 336). Henggeler states that "anti-social behavior of girls is less frequent and less severe than the anti-social behavior of boys" (p. 71).

#### *Interpersonal Factors Associated with Troubled Youth*

There are also a number of interpersonal factors that may correlate with problems in adolescence. Interpersonal factors focus more on the relationships between the individual and others in their surrounding environment. Heinze, Toro, and Urberg (2004) examined the associations among gender, antisocial behavior, and peer group affiliation in a high-risk sample of 401 homeless and matched housed adolescents (139 boys, 262 girls). They found that for both boys and girls associating with many deviant peers was associated with more antisocial behavior (Heinze et al.). Relationships with parents,

peers, and siblings all contribute either positively or negatively to the psychological well-being of adolescents.

Feldman and Weinberger (1994) found that in the course of social development, family influences seem to become partly internalized and transformed into personality characteristics that regulate behavior outside the family sphere. This multi-method, longitudinal study extended the well-established finding that effective parenting practices and good overall family functioning predict a significantly reduced likelihood that boys will engage in such delinquent behavior as carrying weapons, substance abuse, and stealing (Feldman & Weinberger). Baumrind (2005) stated that previous findings (for example, Baumrind, 1991; Steinberg & Silk, 2002) report a positive relation between authoritative parenting and adolescent autonomy.

Learning starts at a very young age and parents have the primary responsibility of modeling the best examples to their children in all aspects of human behavior. Adult modeling of appropriate sexual attitudes and behavior can be an important way to help adolescents make decisions about sexuality (Schvaneveldt & Adams, 1983). A study on African American adolescents and their mothers found that adolescent's reports of more parental decision making over conventional and prudential issues was associated concurrently with better self-worth in early adolescence and less deviance in middle adolescence (Smetana, Campione-Barr, & Daddis, 2004).

One group of researchers studied 182 boys with siblings. They discovered that extensive sibling conflict is predictive of multiple poor adjustment outcomes during adolescence and early adulthood, but the frequency and developmental impact of such conflict may be conditional on ineffective parenting (Bank, Burraston, & Snyder, 2004).

Relationships with those around us can have a tremendous impact on how we think, act, and feel. Consequently, further investigation into these factors seems warranted. This study specifically addressed peer influence with regards to cognitive autonomy.

### Why Study Cognitive Autonomy?

Albert Bandura's social learning theory states that most human behavior is learned observationally through modeling; by observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action (Bandura, 1977). When new behavior is acquired through observation alone, the learning appears to be cognitive (Bandura). He contended that adolescents observe and learn diverse styles of conduct within the comfort of their homes through the abundant symbolic modeling provided by the mass media.

Kroneman, Loeber, and Hipwell (2004) reviewed a number of studies and found that both males and females from different ethnic groups living in disadvantaged neighborhoods compared to those in advantaged neighborhoods tended to be exposed to a higher number of risk factors, including exposure to violence (community violence as well as intra-familial violence), family dysfunction, and the influence of deviant peers.

Media, one of the most influential environmental factors in shaping adolescent cognitive autonomy is addressed in this study with regards to computer use and reading. Unfortunately, data on other environmental factors that shape adolescent development such as family influences (i.e., parenting styles, sibling influence) were not collected. Thus from a social learning perspective the relationship between outside influences and

adolescent cognitive autonomy seems to implicate a rationale for outcomes relating to decision-making in troubled adolescents, but not an assessment of the process itself.

Past research on troubled adolescents has indicated several areas of noteworthy evaluation with regards to understanding the pronounced variability in adolescent behavior. Notably absent from this literature is a consideration of adolescent cognitive autonomy. The following review will focus on the research that has been done in the five elements that make up cognitive autonomy.

### Areas of Cognitive Autonomy

As researchers attempt to identify possible explanations for understanding and correcting the problems associated with troubled youth, this review has highlighted the paucity of most behavioral oriented lines of attack and provided direction toward a potentially more beneficial approach of examining independent thought. This section reviewed the literature in specific areas of adolescents' independent thought including an ability to make decisions, voice opinions, self-assess, and capitalize on comparative validation.

#### *Decision-Making*

Decision theory specifies five general steps to be taken in making any important or risky decision: (a) identify the possible options; (b) identify the consequences that might follow from each option; (c) evaluate the desirability of each consequence; (d) assess the likelihood of each consequence and whether each action should be taken; and (e) combine these steps according to a logically defensible decision rule (Beyth-Marom,

Austin, Fischhoff, Palmgren, & Jacobs-Quadrel, 1993). With most major decisions it would be ideal to choose that which will bring the most benefits with the least amount of costs. Sometimes adolescents don't even consider the consequences; instead they choose spontaneously for the thrill and excitement, and may later regret their decision (Beckert, 2005).

Adolescents develop a variety of cognitive skills that enable them to evaluate future consequences, weigh alternatives, and select behaviors (Trad, 1994). If these cognitive skills have not matured fully, the adolescent may be predisposed to enact risk-taking behaviors, such as becoming pregnant (Trad). Most researchers agree that young adolescents probably have not fully developed this skill (Caskey & Ruben, 2003). If the adolescents' development of autonomy and establishment of responsibility and sound decision-making impact their social health and interpersonal relationships, then autonomy also plays a role in how adolescents make choices and practice behaviors related to health (Spear & Kulbok, 2004). Gordon (1990) stated that adolescents acquire skills associated with formal operational thought, such as the tendency to envision alternatives, to evaluate options, and to engage in perspective taking. For the majority of adolescents, cognitive orientation undergoes a significant transformation (Gordon).

In another study looking at supporting autonomy in the classroom and how teachers can encourage adolescent decision-making and ownership, Stefanou and colleagues found that support for cognitive autonomy may foster a more enduring psychological investment in deep-level thinking (Stefanou, Perencevich, DiCintio, & Turner, 2004). They stated that support for cognitive autonomy in the classroom encourages student ownership of the learning and can include teacher behaviors such as

asking students to justify or argue for their point, asking students to generate their own solution paths, or asking students to evaluate their own and others' solutions or ideas (Logan, DiCintio, Cox, & Turner, 1995). They further suggest that it is support of cognitive autonomy that truly leads to the psychological investment in learning that educators strive for (Stefanou et al.). Without this deep-level thinking and ownership, adolescents may lack the skills to evaluate certain situations and decisions.

In one large study, Bauman (1980) asked 1,078 adolescents how likely each of 54 possible consequences would be if they used marijuana, as well as how attractive (or unattractive) each would be if it did occur. Bauman found that the most important (high valence and high probability) positive consequences of marijuana use were ones bringing direct and immediate physical or psychological satisfaction (Bauman). Another study on adolescent substance abuse in a 3-year longitudinal study of 398 adolescent first time juvenile status offenders found that none of the four randomly assigned treatment groups showed a significant difference in recidivism rates (Patrick & Marsh, 2005). It may be that in treatment approaches, evaluative thinking should be one area which all treatment programs should consider.

Another significant study surveyed 3,544 adolescents born in 1980 to 1981 about their expectations as teens for significant life events (Fischhoff, Parker, & Bruin, 2000). In discussion of adolescent risk taking the authors stated that teens may take risks, in part, because they underestimate the probability of something going wrong (as do adults; Fischhoff et al.). But they may also take risks, in part, because they underestimate what is at stake, as a result of overestimating the risk of dying (Fischhoff et al.). That is, they take risks not just because of an exaggerated feeling that they are not going to die



(Elkind, 2001), but also because of an exaggerated feeling that they are not going to live (Fischhoff et al.). Although risk-taking cannot be entirely eliminated, risk taking involving serious consequences may be minimized due to a more complete understanding of how adolescents evaluate thought.

There are a number of decisions and choices each individual makes on a daily basis. Some decisions are quite inconsequential, (e.g., what to eat for breakfast), and may have to be made on a daily basis. Other decisions may only come once a lifetime, but are quite monumental, (e.g., should I light the school on fire?). Adolescence and emerging adulthood present the greatest opportunity for such decisions (Arnett, 2001). There have been a number of studies done on decision-making with regards to adolescent autonomy. Schvaneveldt and Adams (1983) stated:

It seems clear that adolescents experience high levels of ambivalence concerning planning and decisions. They want power, but are often reluctant to assume its associated responsibilities. They are often handicapped by lack of experience, perspective, and information relating to areas of decision-making concern. While wanting increasing amounts of freedom to make decisions and be on their own, many adolescents are reluctant to abandon the security of parents, family, and community (p. 103).

Adolescents that make good decisions and possess leadership qualities can influence others in their decision-making processes. The opposite is true where a severely troubled adolescent with good leadership skills can pressure and manipulate other adolescents into participating in various delinquent behaviors. It is imperative that adolescents make good

decisions during this stress and storm period of life as adulthood and major life changing decisions are not too far ahead in their future.

A study on the decision-making perspective of risk-taking in adolescence stated that while adolescents and minors in general have been recognized in recent decades as possessing fundamental Constitutional rights, the Supreme Court has maintained that the Constitutional rights of minors cannot be equated with those of adults because minors lack decision-making skills (Furby & Beyth-Marom, 1992).

“During the formative years of childhood and adolescence, minors often lack the experience, perspective, and judgment to recognize and avoid choices that could be detrimental to them” (Justice Powell, in *Belotti vs. Baird*, cited in Gardner et al., 1989). “Most children, even in adolescence, simply are not able to make sound judgments concerning many decisions, including their need for medical care or treatment” (Chief Justice Burger in *Parham vs. J.R.*, cited in Gardner et al.). Research has shown that understanding chance and probability may be an important factor in sexual risk-taking behavior in adolescence (Commendador, 2003). Ganzel (1999) stated that mood, age, and gender all can impact decision-making processes in adolescents and adults.

With all of the important decisions to make during adolescence, parents can have a great impact either helping or hindering their children with those important decisions. One study found that parental responsiveness was a significant factor in determining the source of adolescent decision-making assistance, but parental demandingness was not (Bednar & Fisher, 2003). Another study of 145 mothers and children found that among offspring of depressed mothers, higher levels of emotional autonomy (detachment) significantly predicted increases in internalizing and externalizing problems, whereas

among offspring of non-depressed mothers, higher levels of emotional autonomy significantly predicted decreases in adolescents' symptoms (Garber & Little, 2001). Parents should be great resources for their children in making informed decisions, though sometimes they are not. However, some adolescents rely too much on their peers and often times get wrong information or feel that can't go to their parents. The ability to make decisions and evaluate thought merits further consideration in relation to troubled status.

### *Voicing Opinions*

Voicing opinions represents an ability to verbally express how one feels about certain situations and to appropriately share these points of view with others in the peer group. The importance of voicing one's opinion peaks in adolescence (Freud, 1970). It might stand to reason that an adolescent who can speak his or her mind and let others know why they don't want to engage in risky behaviors are more likely to stay out of trouble. This ability can possibly protect those who do not want to engage in deviant behaviors. They may be banished from that particular peer group, but for a brief moment they have avoided trouble. Adolescents looking for trouble will usually find it and adolescents wanting to stay away from trouble can do so most of the time.

It is important at this age to find positive peer groups where positive opinions are shared and followed. The way in which adolescents communicate with each other can be quite different than how they communicate with adults. One study on communication skills and adolescent opinions found three skills that emerged relatively high in importance for adolescents' own communication when talking with their peers:

nonverbal comprehension, perspective taking, and vocal tone interpretation (Reed, McLeod, & McAllister, 1999). Another study looked at adolescents' experience in daily interactions with family and friends. They found that adolescents in their study who spent more time with friends than with family showed poorer school performance and wider mood variability (Larson, 1983).

Successful relationships with peers and teachers facilitate adolescents' social growth and identity formation (Newman & Newman, 1987; Wright & Keple, 1981), contribute support and encouragement to adolescents during a stage when parental ties are loosening (Dusek, 1991), and provide positive models for later adult relationships (Conger & Peterson, 1977). One researcher looked at the decision advice of 108 adolescents in three different grade levels and found that in adolescents' advice to their peers, there is a significant increase, with grade level, in recognition and cautious treatment of "vested interests," and in advice to solicit independent professional opinions (Lewis, 1981). However, Lewis found no differences between grade levels in the incorporation of negative information about a trusted adult or in recommendations that peers or parents be consulted about the decisions (Lewis). Geary and Boykin (1996) stated that adolescent autonomy from parents is a predictor of low susceptibility to peer pressure.

Youth involved in violence generally have problems with learning in school, communication and language, including conversational interactions (Foley, 2001). Though they may have communication and language problems, the ability to voice one's opinion and influence others can be quite dangerous, especially if there is a group of followers in the peer group. An ability to influence others can also be a positive attribute.

Because voicing opinions is an important factor in adolescent cognitive development studying both populations of differing troubled status seemed advisable and necessary.

### *Self-Evaluation*

Self-evaluation is an introspective consideration for one's own thoughts or emotions. It is the ability of an adolescent to use self-analysis and self-examination to better oneself. Behavior difficulty is an important factor in identity development and may be symptoms or manifestations of adolescent identity crisis (Wires & Barocas, 1994). Adolescents quite often are making their own self-examination of how they look, who they want to be, and what they want to change or continue with in their life. The success of forming or finding that unique identity depends partially on how well the adolescent can use introspection and self-analysis. The social adaptation theory postulates that the individual's self attributes, such as the adolescent's self-evaluation of his or her physical status and role status, give rise to adaptive strategies for evaluating his or her position relative to peers (Eisert & Kahle, 1982). In various peer groups adolescents could be identified as the followers of the crowd or the leader of the pack. However, each individual chooses for themselves how to spend their time, who to spend time with, and may think about why they do the things they choose to do.

A generation ago Mertz (1975) provided appropriate insights on self-evaluation of adolescent readers. He stated that the search for identity development in the adolescent, which often occasions ambivalence and confusion, is part of larger social patterns which have educational implications not only for reading but also how reading can potentially help students to find their identities (Mertz). If adolescents are secure in their identity

formation, they may be less likely to be suffering from serious troubles in their lives.

Another academic study found that for French and Caucasian American adolescents, reading comprehension scores were related to meta-cognitive knowledge, academic self-concept, and attributions of success to ability (Kurtes-Costes, Ehrlich, McCall, & Loridant, 1995). As students succeed in academics, their self-esteem and self-concept may improve and influence more aspects of their lives.

As adolescent reading has been discussed in the previous paragraph, gender influence on reading must also be considered. An additional study provides evidence that reading is constructed within both domestic and school settings as an interest more appropriate for adolescent girls than it is for boys (Millard, 1997). This article also argues the three specific areas of influence that contribute to shaping the attitudes and expectations of adolescent reading in Britain are: the family, friends, and peer group at school (Millard).

One complex study involving 2,053 participants from late childhood to early adulthood evaluated the mind, self, personality, and the interpersonal relationship of these three areas (Demetriou, 2003). The study included a measure of self-evaluation to assess the organization and interrelationships of cognitive processes at the level of performance to be compared with the organization and interrelationships of these processes at the level of self-awareness. Because of the complexity of our human minds, we as human beings are constantly evaluating ourselves, our environment, relationships, and many other things. Being able to use self-evaluation to improve any of these areas is a component of cognitive autonomy. The lack of self-evaluative skills needed to make changes in life could prevent an adolescent from progressing and developing in many areas.

The purpose of this study was to analyze the difference in cognitive autonomy between identified troubled adolescents and not identified troubled adolescents. Using a self-evaluation measure which included an assessment of how well adolescents self-evaluate gives insight into their cognitive processes.

### *Outside Influences on Thinking*

Self-evaluation is an important aspect of adolescent cognition. However, relying solely on one's own assessment is often inadequate or flawed (Dunning, Heath, & Suls, 2004). Consequently, an ability to weigh the influence of others on decision-making processes also deserves consideration (Beckert, 2006). Just how influential is peer pressure and how important is it for adolescents to feel included into their peer group? The peer group is important in the psychological development of adolescents, serving as a guide in the formation of identity as adolescents begin to establish a sense of self that is separate from the family (Brown, 1990). Many studies have shown that during adolescence peers are more influential than parents. Outside influence on thinking highlights an ability to seek support and acceptance from a peer group and weigh the influence of others. Peer influence is at its peak during early adolescence, around age 14, and then decreases through middle and late adolescence (Brown, Clasen, & Eicher, 1986; Steinberg & Silverberg, 1986).

One study in Uganda on female adolescent sexuality found that peer pressure was a major factor shaping many girls' opinions on sexuality (Kinsman, Nyanzi, & Pool, 2000). Another study done on 10 – 16-year-olds in the United States ( $N = 865$ ) from a range of socioeconomic backgrounds, found by all accounts that girls were more

autonomous than boys (Steinberg & Silverberg, 1986). Girls score higher on all aspects of emotional autonomy, are more resistant to peer pressure (both in antisocial and in neutral situations), and describe themselves as more self-reliant (Steinberg & Silverberg). While emotional autonomy is one aspect to consider in adolescent development, cognitive autonomy should also be considered.

Certain popular behaviors at school and with friends may be reinforced positively and may likely be repeated by others even if it is a negative behavior. During the adolescent years friends become even more important and influential. Advances in cognitive learning theory reveal that learning is an active, self-constructed, and intentional process (Bereiter & Scardamalia, 1989; Lambert & McCombs, 1998; Sinatra, 2000). Bandura (1977) stated that television is particularly successful at presenting models with engaging characteristics and exerts a powerful influence on our lives. Giles and Maltby (2004) postulate from their research that celebrities provide adolescents with a secondary group of pseudo-friends during a time of decreased dependency on parents. Young people are surrounded with positive and negative role models exhibiting varying degrees of human behavior. Today's youth must make daily choices in individual and group settings that may carry significant rewards or grave consequences to future success in society.

It cannot be underestimated how important it is to adolescents to fit in. Adolescents have a need to seek validation from parents, educators, and especially their peer group. One study reported findings illustrating that friendship networks are very heterogeneous in terms of members' participation in delinquent behavior with the majority of adolescents belonging to networks containing both delinquent and non-



delinquent friends (Haynie, 2002). In seeking for this validation from peers an individual must be able to evaluate the risks, benefits, consequences, pros, cons, and rewards associated with each major decision in their lives. Sometimes adolescents do not know as much as they think they know. Adolescents should seek guidance without relying completely on others' opinions. These areas of independent thought give a foundational starting point in researching and discovering factors in adolescent cognitive autonomy.

### Residential Treatment Center

Because the population of "identified as troubled" adolescents in this study all reside in a residential treatment center, a brief review of the literature of the concept of residential treatment centers is included below. Only one residential treatment center participated in this study, but to maintain anonymity the subsequent discussion will focus on general principles of residential treatment centers similar to the one used in this study.

A residential treatment center is a placement option for adolescents that operates in a homelike setting in which a number of unrelated children live for varying time periods. While center capacity varies, clients are placed there because their parents are seeking help or as the result of a court order through interactions with public welfare agencies. Sometimes parents consider this a "last resort" effort to help their child. The center may have a rotating staff or one set of "house parents." Some therapeutic or treatment centers also employ specially trained staff to assist children with behavior and emotional difficulties (R. Bundy, personal communication, August 11, 2006).

Residential treatment centers have been a popular intervention for juvenile delinquent offenders ever since Father Edward Flanagan established his famous Boys Town group home in 1917 to help about half a dozen troubled boys. However, there is little research to support their overall effectiveness (Daly, 1996). Indeed, many researchers believe that small group settings that encourage fraternization among delinquents may actually promote disruptive and deviant behavior (Dishion, Spracklen, Andrews, & Patterson, 1996). In the 1980s and 1990s, some residential treatment centers were also accused of fostering physical and sexual abuse (Rosenthal, Motz, Edmonson, & Groze, 1991).

The dominant treatment approach being used in therapeutic treatment centers today is the Teaching Family Model, which was developed at the University of Kansas in the 1960s and replicated at Boys Town in the early 1970s (Phillips, Phillips, Fixen, & Wolf, 1974). This model relies heavily on structural behavior interventions and highly trained staff who live in the residential treatment center 24 hours a day and act as house parents. Other residential treatment centers rely more on group interaction and individual psychotherapy (Satcher, 1999).

Researchers suggest that adolescents placed in a therapeutic treatment center often experience positive effects on their behavior while they are in the center, but there is little, if any, evidence to suggest that treatment outcomes are sustained over time (Kirigin, Braukmann, Atwater, & Wolf, 1982). In addition, two controlled studies (Chamberlain & Reid, 1998; Rubenstein, Armentrout, Levin, & Herald, 1978) comparing the benefits of a therapeutic treatment center with a therapeutic foster home have clearly demonstrated that a foster home offers several important advantages (fewer criminal

referrals and more frequent reunifications with families in the first study; lower costs in the second study).

One explanation for the disappointing long-term outcomes of a therapeutic treatment center may be the psychological profiles of their clients. Residential treatment centers are frequently seen as the last stop before secure detention, and the youth referred to them often suffer from serious mental or behavioral problems that have prevented successful placement in foster care (Satcher, 1999). To increase the likelihood of long-term positive effects, it is important for residential treatment centers to be seen as only one step in a continuum of care; a continuum that emphasizes sustained treatment after discharge from the home (Lipsey & Howell, 2004). It might be helpful for these programs to evaluate themselves by assessing cognitive change rather than behavioral change.

This section has reviewed the gender, age, and interpersonal research that has been conducted in recent decades that contribute to troubled adolescents. Reasoning for why research in cognitive autonomy and five elements of cognitive autonomy were also included. Also reviewed was the residential treatment center concept and its effectiveness and long term outcomes.

### Conclusion

In an effort to help society understand thinking processes when adolescents find themselves in trouble, more research is needed. A comparison of identified and not identified troubled adolescents in areas of independent thought represents a logical step toward this end.

A critique of the literature currently available revealed few research studies on adolescent independent thought. There may also be a lack of understanding of how this independent thought develops across individuals. Based on the review of literature presented above, the purpose of this study was to determine the extent to which elements of cognitive autonomy differ for “identified” trouble adolescents when compared to “not identified” as troubled adolescents. The current investigation studied adolescents at a traditional public high school (not identified as troubled adolescents) and adolescents at a residential treatment center (identified troubled adolescents) on elements of cognitive autonomy. The following research questions guided this study:

Research Question #1- What are the differences and similarities on five elements of cognitive autonomy between a population of “not identified” as troubled adolescent ninth-grade males at a traditional public high school and a population of “identified” as troubled adolescent ninth-grade males from a residential treatment center?

Research Question #2- What are the differences and similarities on five elements of cognitive autonomy between a population of “not identified” as troubled adolescent ninth-grade females at a traditional public high school and a population of “identified” as troubled adolescent ninth-grade females from a residential treatment center?

Research Question #3- What are the differences and similarities on five elements of cognitive autonomy between a population of “not identified” as troubled adolescent 11<sup>th</sup> grade males at a traditional public high school and a population of “identified” as troubled adolescent 11<sup>th</sup> grade males from a residential treatment center?

Research Question #4- What are the differences and similarities on five elements of cognitive autonomy between a population of “not identified” as troubled adolescent

11<sup>th</sup> grade females at a traditional public high school and a population of “identified” as troubled adolescent 11<sup>th</sup> grade females from a residential treatment center?

Research Question #5- What are the differences and similarities on five elements of cognitive autonomy using other variables including school grades, reading time, and computer use between a population of “not identified” as troubled adolescents at a traditional public high school and a population of “identified” as troubled adolescents from a residential treatment center?

## CHAPTER III

## METHODS

The purpose of this study was to determine the extent to which factors of independent thought differ for identified troubled adolescents when compared to adolescents not identified as troubled. To accomplish this task, this study quantitatively evaluated data provided from responses to the *Cognitive Autonomy and Self-Evaluation (CASE)* inventory from two populations of adolescent participants. Below is a description of the research design, sampling method, and data analyses.

## Research Design

A cross-sectional, descriptive design was used for this study to assess how adolescents in Grades 9 and 11 from a traditional public high school score on the *CASE* inventory compared to adolescents in Grades 9 and 11 from a residential treatment center. Analysis of scores of the *CASE* inventory compared the two populations by (a) gender, (b) school grades, (c) weekly reading time, and (d) weekly computer time.

## Sample

This study employed a non-probability convenience sampling method. The first population in this study consisted of adolescents "not identified" as troubled both male ( $n = 73$ ) and female ( $n = 64$ ) who attended a traditional high school in the western United States. These adolescents were in the 9<sup>th</sup> and 11<sup>th</sup> grades and ranged in age from 14 to 17 at the time of the survey. As shown in Table 1, 76% of this sample identified themselves

as Caucasian, 16% as Hispanic, 1% as Black, 3% as Asian, and 4% as other (including multiple races). Fifty-three percent of this sample was male and 47% was female.

The second population was comprised of adolescents “identified” as troubled both male ( $n = 63$ ) and female ( $n = 56$ ) who, at the time of sampling, lived in a residential treatment center (RTC) located in the western United States. Referrals to this facility included but were not limited to emotional, behavioral, or psychological problems including drug use, running away, depression, juvenile crime, and poor decision-making. These youth come to the residential treatment center from various locations across the United States. RTC participants for this study were also in the 9<sup>th</sup> and 11<sup>th</sup> grades and ranged in age from 14 to 17 at the time of the survey. Sixty-nine percent of the sample identified themselves as Caucasian, 8% as Hispanic, 4% as Black, 4% as Asian, and 17% as other (including multiple races). Fifty-three percent of the sample was male and 47% of the sample was female. Table 1 contains additional demographic information from each respondent group.

#### Data Collection

The data collection process consisted of obtaining IRB approval and permission to collect data at both the residential treatment center and traditional public high school. Data collection for this study proceeded in two phases. The first phase of collection took place in fall of 2005 and included the public high school participants in 9<sup>th</sup> and 11<sup>th</sup> grades. The second phase took place in the summer of 2006 for the RTC participants. A brief explanation of the data collection method employed for each group is described on page 30.

Table 1

*Demographic Total Frequencies of All Participants from Both Subgroups*

Variable	High school ( <i>n</i> = 137)		RTC ( <i>n</i> = 119)		Total ( <i>n</i> = 256)	
	<i>Frequency</i>	%	<i>Frequency</i>	%	<i>Frequency</i>	%
<i>Gender</i>						
Male	73	53.7	63	46.3	136	53.1
Female	64	53.3	56	46.7	120	46.9
<i>Age</i>						
14	49	83.1	10	16.9	59	23.0
15	19	41.3	27	58.7	46	18.0
16	50	53.2	44	46.8	94	36.7
17	19	33.3	38	66.6	57	22.3
<i>School year</i>						
9th	67	56.8	51	43.2	118	46.1
11th	70	50.7	68	49.3	138	53.9
<i>Grades</i>						
Above average	55	57.3	41	42.7	96	37.5
Average or below average	79	50.3	78	49.7	157	61.3
Missing	3				3	2.2

(table continues)



Variable	High school (n = 137)		RTC (n = 119)		Total (n = 256)	
	<i>Frequency</i>	<i>%</i>	<i>Frequency</i>	<i>%</i>	<i>Frequency</i>	<i>%</i>
<i>Weekly reading time</i>						
none	17	53.1	15	46.9	32	12.5
0-3 hours	74	76.3	23	23.7	97	37.9
3-6 hours	22	33.8	43	66.2	65	25.4
6 or more hours	24	38.7	38	61.3	62	24.2
<i>Weekly computer use</i>						
none	18	27.3	48	72.7	66	25.8
0-3 hours	63	77.8	18	22.2	81	31.6
3-6 hours	34	70.8	14	29.2	48	18.8
6 or more hours	22	36.1	39	63.9	61	23.8
<i>Ethnicity</i>						
White	104	55.9	82	44.1	186	72.7
Hispanic	22	68.7	10	31.3	32	12.5
Black	1	16.7	5	83.3	6	2.3
Asian	4	44.4	5	55.6	9	3.5
Other	6	26.1	17	73.9	23	9.0

*Traditional Public High  
School Data Collection*

The traditional public high school that participated in this study was located in the western United States. Ninth-grade and 11<sup>th</sup>-grade students were chosen to participate in the study. Parents of potential participants received a letter from the principal of the high school explaining that a survey was approved for the students that sought to understand the way adolescents think independently. Student participation was voluntary so the parents were encouraged to contact the principal if they had concerns. Parents were informed that the name of their child would not be solicited and therefore their responses would remain anonymous. Any parent not wishing their student's participation was instructed to inform their child to abstain without penalty. Over 96% of the eligible students completed the survey. Those who chose not to participate completed homework assignments or read quietly while the others completed the survey. Directions and assistance were provided to the students by the teacher for the completion of the survey. Students who had difficulty with the survey were provided with limited assistance including minimal word clarification and definitions. A few students in the participating classes who completed the survey were not in 9<sup>th</sup> or 11<sup>th</sup> grade and were therefore excluded from analysis. Three adolescents from the traditional high school included in this study filled out the entire survey except for their grades. They are identified as "missing" in the self reported school grades category in Table 1.

*Residential Treatment Center  
Data Collection*

The second phase of the data collection was at a residential treatment center

located in the western United States. Ninth-grade and 11<sup>th</sup>-grade students were also chosen to participate in the study and consent forms were included on surveys for all potential participants. Students at the residential treatment center were also informed that participation in the study was voluntary and that it would not be penalized if they chose not to participate. A brief general review of the content of the *CASE* inventory was given so the participants knew what to expect in the inventory. In an effort to preserve internal validity, researchers also administered the surveys to the RTC participants as part of their regular school day. Minimal assistance was provided to a few students in clarifying definitions and explaining meanings of words. Completed surveys were garnered from 94% of the total eligible population. Only students who matched grade level and age of the high school population were included in this study. Thus the data collection in the second phase yielded 119 participants consisting of all completed *CASE* inventories of participants that matched characteristics with the first phase of data collection.

For both populations of participants anonymity was maintained by not requesting any specific identifying information on the survey. Only an identifying code was used for each participant. All completed inventories were kept secure in locked files. This study compared and contrasted these two populations in five areas of cognitive autonomy as measured by the *CASE* inventory.

### Measurement

The purpose of the *CASE* inventory is to allow adolescents to self-describe areas of independent thinking (Beckert, 2006). It also provides researchers with information about norms of distinct groups of adolescents. The *CASE* inventory has 27 self-report

items that encompass five areas of cognitive autonomy and are included in categories of evaluative thinking, voicing opinions, decision-making, self-assessing, and comparative validation. Additionally, demographic questions addressed areas of gender, ethnicity, school grades, hours spent reading each week, and hours spent on the computer each week. Item selection options can be seen on the demographic pages of the instrument in the Appendix. The cognitive autonomy areas assessed by the *CASE* inventory include content in the following:

1. Adolescents' ability to use Evaluative Thinking -- ability to consider alternatives and consequences: (a) I consider alternatives before making decisions; (b) I think about the consequences of my decisions; (c) I look at every situation from other people's perspectives before making my own judgments; (d) I think of all possible risks before acting on a situation; (e) I think about how my actions will affect others; (f) I think about how my actions will affect me in the long run; (g) I like to evaluate my daily actions; (h) I like to evaluate my thoughts.

2. Adolescent's ability to Voice Opinions -- ability to offer opinions freely when necessary: (a) If I have something to add to a class discussion I speak up; (b) When I disagree with others I share my views; (c) I stand up for what I think is right regardless of the situation; (d) I feel that my opinions are valuable enough to share; (e) At school I keep my opinions to myself.

3. Adolescent's Decision-Making -- ability to make decisions: (a) My decision-making ability has improved with age; (b) I am better at decision-making than my friends; (c) There are consequences to my decisions; (d) I think more about the future

today than I did when I was younger; (e) I can tell that my way of thinking has improved with age; (f) I am good at evaluating my feelings.

4. Adolescent's ability to Self-Assess -- ability to identify personal strengths and abilities: (a) I am good at identifying my own strengths; (b) I am best at identifying my abilities; (c) I am the best judge of my talents.

5. Adolescents ability to utilize Comparative Validation – the role of consultants in decision making: (a) I need family members to approve my decisions; (b) I need my views to match those of my parents; (c) It is important to me that my friends approve of my decisions; (d) I need my views to match those of my friends; (e) I care about what others think of me.

The *CASE* inventory is scored on a 5-point Likert-type scale. In the first section, questions one through twelve, participants were given a statement and were asked to evaluate themselves on that statement using “always, often, sometimes, seldom, and never.” An example statement in this section was, “I think of all possible risks before acting on a situation.” Participants were then asked to rate themselves from always (scored as a 5) to never (scored as a 1). Some of the items on the *CASE* are reverse coded so an always was a one, and never was a five.

In the second section of the *CASE*, questions thirteen through twenty-seven, participants were given similar statements as in the first section, only the 5-point responses ranged from strongly agree to strongly disagree. A sample statement from this section was, “I am best at identifying my abilities.” Participants could either agree with this statement about themselves or disagree with this statement using the 5-point Likert-scale. The five scales of the *CASE* inventory are presented in a specific sequence where

questions measuring the same construct are throughout the survey and not necessarily together.

### Validity and Reliability

The validity and reliability of the *CASE* inventory has been tested with a number of sample groups. Validity of scores on the *CASE* inventory has been established (Beckert, 2005). Responses were factor analyzed by item and subscale. Analysis with principal components and principal factor solutions followed by a varimax rotation resulted in eigenvalues of 1.0 or greater for five factors making a “best fit.” For the traditional public high school populations subscale factor loadings indicated that all of the 27 items loaded properly on the expected subscales. In addition, the scales were marginally correlated (Beckert, 2006).

Reliability alpha coefficients attained through analysis of responses from high school students (Beckert, 2006) were acceptable for the scales and ranged from .64 to .87. Alpha coefficients for the current investigation are presented in the following chapter.

### Data Analysis

To answer the five research questions of this study, data analyses have been completed with the use of the Statistical Package for the Social Sciences (SPSS version 14.0) for windows. Research questions focused on differences and associations in connection with evaluative thinking, voicing opinions, decision-making, self-assessing, and comparative validation.

The dependent variables for this study consisted of the subscale scores on the *CASE* inventory. Independent variables were the descriptive variables which included: "identified troubled status" (residential treatment center resident) or "not identified troubled status" (traditional high school student), gender (male, female), age (14, 15, 16, 17), year in school (9<sup>th</sup> grade, 11<sup>th</sup> grade), participant's grades (above average, average / below average), weekly reading time (none, 0-3 hours, 3-6 hours, 6 or more hours), and weekly computer use (none, 0-3 hours, 3-6 hours, 6 or more hours). Independent sample *t*-tests were used to compare the "identified" and "not identified" adolescent groups. Descriptions of this information can be found in Table 1.

## CHAPTER IV

## RESULTS

The results for a comparison of two groups of adolescents in cognitive autonomy as assessed by the *Cognitive Autonomy Self Evaluation (CASE)* inventory are outlined in this chapter. For the population of adolescents at a traditional public high school ( $n = 137$ ) and a population of adolescents at a residential treatment center ( $n = 119$ ), descriptive and inferential statistics were performed. The *CASE* inventory included 27 total items subdivided into five subscales including evaluative thinking, voicing opinions, decision making, self-assessing, and comparative validation. Independent variables included gender (male, female), age (14-15, 16-17), year in school (9<sup>th</sup> grade, 11<sup>th</sup> grade), participant's grades (above average, average or below average), weekly reading time (none, 0-3 hours, 3-6 hours, 6 or more hours), and weekly computer use (none, 0-3 hours, 3-6 hours, 6 or more hours).

## Reliability

Cronbach's alpha coefficients were used to assess the internal consistency of responses on each scale of the *CASE* Inventory. The scores from each respondent group were analyzed for each of the scales of the instrument. In this study, the respondent scores yielded sound reliability results for most of the scales. As seen in Table 2, the only scale that produced undesirable alpha scores was the evaluative thinking scale for RTC students ( $\alpha = .47$ ). All of the other respondent groups had favorable alpha scores (Henson, 2001) for each scale ranging from .63 to .87.



Table 2

*Coefficient Alphas (Cronbach's Alpha) of Reliability for Each CASE Inventory Scale for Scores From Each Group of Adolescent Respondents.*

Variables	CASE inventory # of items	Traditional high school ( <i>n</i> = 137)	Residential treatment center ( <i>n</i> = 119)
Total	27	0.84	0.76
Evaluative thinking	8	0.87	0.47
Voicing opinions	5	0.80	0.83
Decision-making	6	0.79	0.67
Self-assessing	3	0.72	0.81
Comparative validation	5	0.63	0.65

### Research Questions

Analyses for this study proceeded according to the research questions outlined in chapter two. For each research question, the results of analyses are presented below. An independent sample *t* test was used to measure the significance of differences between groups.

#### *Gender Comparisons*

The first research question dealt with how scores on the CASE inventory differed for ninth-grade male adolescents from the traditional public high school compared to the

ninth-grade males at the residential treatment center. Table 3 shows the difference in response for participants' grade level (ninth), and gender (males), for each scale and how the scores on the *CASE* inventory. As seen in Table 3, no scales of the *CASE* inventory differed statistically for these two populations of ninth-grade males.

Table 3

*Mean Scores and Standard Deviations of the CASE Inventory for Ninth-Grade Male and Female Participants from a Traditional High School and a Residential Treatment Center*

Scale	Gender	Traditional high school ( <i>n</i> = 67)		Residential treatment center ( <i>n</i> = 51)		<i>df</i>	<i>T</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.00	0.73	3.13	1.01	2,60	0.57	0.57
	Females	3.46	0.63	3.07	0.60	2,54	-2.38	0.02**
Voicing opinions	Males	3.32	0.64	3.45	0.63	2,60	0.81	0.42
	Females	3.61	0.66	3.18	0.78	2,54	-2.23	0.03**
Decision-making	Males	3.69	0.70	3.95	0.57	2,60	1.56	0.13
	Females	4.06	0.48	3.75	0.59	2,54	-2.18	0.03**
Self-assessing	Males	3.60	0.73	3.37	0.91	2,60	-1.11	0.27
	Females	3.69	0.83	3.19	0.78	2,54	-2.29	0.03**
Comparative validation	Males	2.98	0.65	2.94	0.64	2,60	-0.27	0.79
	Females	2.89	0.61	2.98	0.53	2,54	0.55	0.58

Males High School (*n* = 36); Females High School (*n* = 31); Males Center (*n* = 26); Females Center (*n* = 25); \* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

The second research question dealt with how scores on the *CASE* inventory differed for ninth-grade female adolescents from the traditional public high school compared to the ninth-grade females at the residential treatment center. Table 3 also shows the self reported scores of ninth-grade female participants for each scale and how the scores on the *CASE* inventory differ for adolescents from the traditional public high school compared to the adolescents from the residential treatment center. A significant difference was found in the scale areas of evaluative thinking  $t(2,54) = -2.38, p < .02$ , voicing opinions  $t(2,54) = -2.23, p < .03$ , decision making  $t(2,54) = -2.18, p < .03$ , and self-assessing  $t(2,54) = -2.29, p < .03$ . Each of the significant scales showed that ninth-grade high school females assigned higher scores than RTC ninth-grade females. In the first scale, the high school ninth-grade females rated themselves higher in evaluative thinking ( $M = 3.46, SD = .63$ ) to the treatment center ninth-grade females ( $M = 3.07, SD = .60$ ). Ninth grade high school females also scored themselves higher in voicing opinions ( $M = 3.61, SD = .66$ ) than the treatment center females ( $M = 3.18, SD = .78$ ). For decision-making, ninth-grade high school females ( $M = 4.06, SD = .48$ ) were again higher than treatment center females ( $M = 3.75, SD = .59$ ), and ninth-grade high school females' self-assessing ( $M = 3.69, SD = .83$ ) was higher than treatment center females ( $M = 3.19, SD = .78$ ). The only scale that was not statistically significant for the ninth-grade female comparison was comparative validation.

Addressing how scores on the *CASE* inventory differed for 11<sup>th</sup> grade male adolescents from the traditional public high school compared to the 11<sup>th</sup> grade males at the residential treatment center, Table 4 shows that none of the five scales of the *CASE* inventory differed significantly.

Table 4

*Mean Scores and Standard Deviations of the CASE Inventory for 11th Grade Male and Female Participants from a Traditional High School and a Residential Treatment Center*

Scale	Gender	Traditional high school ( <i>n</i> = 70)		Residential treatment center ( <i>n</i> = 68)		<i>df</i>	<i>t</i>	<i>p</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.27	0.58	3.04	0.64	2,72	-1.60	0.11
	Females	3.44	0.73	3.34	0.74	2,62	-0.51	0.62
Voicing opinions	Males	3.55	0.80	3.78	0.70	2,72	1.36	0.18
	Females	3.64	0.72	3.77	0.70	2,62	0.7	0.48
Decision-making	Males	4.01	0.46	4.00	0.51	2,72	-0.12	0.90
	Females	4.09	0.52	4.06	0.44	2,62	-0.18	0.86
Self-assessing	Males	3.67	0.53	3.61	0.70	2,72	-0.40	0.69
	Females	3.44	0.68	3.68	0.84	2,62	1.23	0.22
Comparative validation	Males	3.19	0.61	3.26	0.55	2,72	0.48	0.63
	Females	3.12	0.61	3.06	0.69	2,62	-0.31	0.76

Males High School (*n* = 37); Females High School (*n* = 33); Males Center (*n* = 37); Females Center (*n* = 31)

Table 4 also shows no significant mean differences for 11<sup>th</sup>-grade female participants' from the traditional public high school compared to 11<sup>th</sup>-grade female participants at the residential treatment center as measured by the *CASE* inventory.

*Grades, Reading, and Computer Use*

The fifth research question queried how scores on the *CASE* inventory differed for adolescents at the traditional public high school compared to adolescents at the residential treatment center with regards to other variables shown in the literature that correlate with troubled status in adolescence. Areas of potential relatedness comprised in this study included school grades, weekly reading time, and weekly computer use.

Tables 5 through 10 illustrate the results of analyses for each of these variables. As was the case with the previous research questions, an independent *t* test was employed for analysis.

Because adolescents tend to inflate self-reported grades, groups were divided as above average and average/below. Found in Table 5 are the participants' self-reported school grades for each scale and how the scores on the *CASE* inventory differ for the two populations of adolescents. The results of the above average students had no mean differences of the *CASE* inventory approach statistical significance.

Table 6 shows the participants' self-reported school grades (average or below average) for each scale and how the scores on the *CASE* inventory differed for the two populations of adolescents. In both males and females, the results of the average or below average students had no mean differences of the *CASE* inventory approach statistically significance difference.

Because the purpose of the study was to compare cognitive autonomy between two adolescent groups, amount of time reading was separated in an effort to maximize (or not mask) variable differences.

Table 5

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported Above Average Grades*

Scale	Gender	Traditional high school ( <i>n</i> = 55)		Residential treatment center ( <i>n</i> = 41)		<i>df</i>	<i>t</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.22	0.65	3.03	0.60	2,44	-0.98	0.33
	Females	3.58	0.69	3.36	0.75	2,48	-1.06	0.29
Voicing opinions	Males	3.70	0.66	3.91	0.50	2,44	1.12	0.27
	Females	3.69	0.70	3.86	0.74	2,48	0.84	0.41
Decision-making	Males	4.02	0.45	4.11	0.39	2,44	0.63	0.53
	Females	4.15	0.51	4.05	0.45	2,48	-0.79	0.44
Self-assessing	Males	3.75	0.57	3.68	0.51	2,44	-0.42	0.68
	Females	3.46	0.70	3.67	0.92	2,48	0.91	0.37
Comparative validation	Males	3.04	0.60	3.15	0.68	2,44	0.54	0.59
	Females	3.05	0.56	2.97	0.66	2,48	-0.45	0.66

Males High School (*n* = 27); Females High School (*n* = 28); Males Center (*n* = 19); Females Center (*n* = 22)

In Table 7, participants' self-reported weekly reading time (0 to 3 hours) for each scale and how the scores on the *CASE* inventory differed for the two groups of adolescents. A significant difference was found in the scale areas of evaluative thinking ( $t(2,51) = -2.63, p < .01$ , for female participants. The infrequent reading high school females rated themselves higher in evaluative thinking ( $M = 3.26, SD = .64$ ) than the infrequent reading treatment center females ( $M = 2.76, SD = .69$ ). No other mean

differences under investigation approached significance. Table 8 shows the difference in scores for each group of participants' according to their self-reported weekly reading time (3 or more hours) for each scale on the *CASE* inventory.

Table 6

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported Average or Below Average Grades*

Scale	Gender	Traditional high school ( <i>n</i> = 79)		Residential treatment center ( <i>n</i> = 78)		<i>df</i>	<i>t</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.11	0.68	3.09	0.89	2,87	-0.07	0.94
	Females	3.30	0.64	3.13	0.64	2,66	-1.09	0.28
Voicing opinions	Males	3.28	0.73	3.54	0.72	2,87	1.63	0.11
	Females	3.55	0.70	3.27	0.74	2,66	-1.62	0.11
Decision-making	Males	3.77	0.66	3.92	0.57	2,87	1.17	0.25
	Females	3.99	0.49	3.84	0.57	2,66	-1.16	0.25
Self-assessing	Males	3.58	0.66	3.44	0.89	2,87	-0.86	0.39
	Females	3.60	0.79	3.32	0.76	2,66	-1.45	0.15
Comparative validation	Males	3.13	0.66	3.12	0.57	2,87	-0.86	0.39
	Females	2.99	0.67	3.06	0.60	2,66	0.42	0.68

Males High School (*n* = 45); Females High School (*n* = 34); Males Center (*n* = 44); Females Center (*n* = 34)

Table 7

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported 0 to 3 Hours of Weekly Reading Time*

Scale	Gender	Traditional high school ( <i>n</i> = 91)		Residential treatment center ( <i>n</i> = 38)		<i>df</i>	<i>t</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.10	0.70	2.82	0.60	2,74	-1.62	0.11
	Females	3.26	0.64	2.76	0.69	2,51	-2.63	0.01***
Voicing opinions	Males	3.40	0.72	3.41	0.74	2,74	0.03	0.98
	Females	3.43	0.73	3.22	0.77	2,51	-0.96	0.34
Decision-making	Males	3.81	0.65	3.82	0.46	2,74	0.04	0.97
	Females	4.03	0.54	3.77	0.55	2,51	-1.58	0.12
Self-assessing	Males	3.70	0.62	3.43	0.75	2,74	-1.62	0.11
	Females	3.44	0.73	3.31	0.79	2,51	-0.55	0.59
Comparative validation	Males	3.09	0.63	3.30	0.58	2,74	1.30	0.20
	Females	2.93	0.58	2.78	0.74	2,51	-0.84	0.41

Males High School (*n* = 55); Females High School (*n* = 36); Males Center (*n* = 21); Females Center (*n* = 17); \* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

In table 8, one area that approached statistical significance for females was in evaluative thinking ( $t(2,65) = -1.72, p < .09$ , where the high school females who read more than 3 hours each week scored themselves higher in their evaluative thinking than the females at the residential treatment center who read more than 3 hours each week. No other mean differences of the *CASE* inventory approached significance.



Table 8

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported 3 or More Hours of Weekly Reading Time*

Scale	Gender	Traditional high school ( <i>n</i> = 46)		Residential treatment center ( <i>n</i> = 81)		<i>df</i>	<i>t</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.26	0.57	3.21	0.87	2,58	-0.23	0.82
	Females	3.69	0.66	3.42	0.59	2,65	-1.72	0.09
Voicing opinions	Males	3.53	0.76	3.77	0.63	2,58	1.24	0.22
	Females	3.87	0.55	3.63	0.77	2,65	-1.44	0.16
Decision-making	Males	3.98	0.45	4.06	0.55	2,58	0.53	0.60
	Females	4.13	0.45	3.99	0.52	2,65	-1.19	0.24
Self-assessing	Males	3.44	0.66	3.56	0.83	2,58	0.51	0.62
	Females	3.73	0.77	3.53	0.86	2,65	-0.98	0.33
Comparative validation	Males	3.09	0.69	3.04	0.60	2,58	-0.26	0.80
	Females	3.10	0.65	3.13	0.53	2,65	0.23	0.82

Males High School (*n* = 18); Females High School (*n* = 28); Males Center (*n* = 42); Females Center (*n* = 39)

Table 9 highlights the participants' self-reported weekly computer use (0 to 3 hours) for each scale and how the scores on the CASE inventory differed for the two populations of adolescents. One area that was statistically significant was evaluative thinking,  $t(2,69) = -2.41$ ,  $p < .02$ , for females. The female participants at the traditional public high school who used the computer infrequently rated themselves higher in evaluative thinking ( $M = 3.50$ ,  $SD = .72$ ) than the residential treatment center females

who used the computer infrequently ( $M = 3.12$ ,  $SD = .60$ ). In a similar manner, evaluative thinking in males who used the computer infrequently, approached statistical significance,  $t(2,74) = -1.82$ ,  $p < .07$ .

Table 9

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported 0 to 3 Hours of Weekly Computer Use*

Scale	Gender	Traditional high school ( $n = 81$ )		Residential treatment center ( $n = 66$ )		<i>df</i>	<i>t</i>	<i>P</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative thinking	Males	3.22	0.64	2.89	0.92	2,74	-1.82	0.07
	Females	3.50	0.72	3.12	0.60	2,69	-2.41	0.02**
Voicing opinions	Males	3.48	0.76	3.45	0.76	2,74	-0.13	0.90
	Females	3.51	0.67	3.39	0.81	2,69	-0.65	0.52
Decision-making	Males	3.83	0.66	3.86	0.50	2,74	0.24	0.81
	Females	4.05	0.56	3.87	0.50	2,69	-1.45	0.15
Self-assessing	Males	3.62	0.62	3.40	0.80	2,74	-1.31	0.19
	Females	3.56	0.68	3.28	0.88	2,69	-1.55	0.13
Comparative validation	Males	3.05	0.60	3.22	0.58	2,74	1.21	0.23
	Females	3.06	0.65	2.94	0.57	2,69	-0.81	0.42

Males High School ( $n = 42$ ); Females High School ( $n = 39$ ); Males Center ( $n = 34$ ); Females Center ( $n = 32$ ); \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Table 10 shows the participants' self-reported weekly computer use (3 or more hours) for each scale and how the scores on the *CASE* inventory differed for the two populations of adolescents. One area that was statistically significant was in the area of voicing opinions,  $t(2,58) = 3.15, p < .00$ , for males. The male participants at the residential treatment center who used the computer at least 3 hours each week rated themselves significantly higher in voicing opinions ( $M = 3.88, SD = .50$ ) than the high school males who used the computer at least 3 hours each week ( $M = 3.38, SD = .69$ ). Another area, decision-making in males, approached statistical significance,  $t(2,58) = 1.65, p < .10$ . Once again, the males at the residential treatment center who used the computer at least 3 hours each week scored themselves higher in decision-making than the males from the traditional public high school who used the computer at least 3 hours each week.

Table 10

*Mean Scores and Standard Deviations of the CASE Inventory for Males and Females Who Self-Reported 3 or More Hours of Weekly Computer Use*

Scale	Gender	Traditional high school (n = 56)		Residential treatment center (n = 53)		df	t	P
		M	SD	M	SD			
Evaluative thinking	Males	3.02	0.71	3.29	0.60	2,58	1.57	0.12
	Females	3.37	0.60	3.36	0.79	2,47	-0.03	0.98
Voicing opinions	Males	3.38	0.69	3.88	0.50	2,58	3.15	0.00***
	Females	3.81	0.69	3.65	0.75	2,47	-0.77	0.45
Decision-making	Males	3.89	0.53	4.12	0.54	2,58	1.65	0.10
	Females	4.10	0.40	3.99	0.58	2,47	-0.76	0.45
Self-assessing	Males	3.67	0.66	3.64	0.79	2,58	-0.12	0.90
	Females	3.56	0.87	3.71	0.73	2,47	0.65	0.52
Comparative validation	Males	3.14	0.69	3.02	0.62	2,58	-0.71	0.48
	Females	2.92	0.57	3.13	0.68	2,47	1.19	0.24

Males High School (n = 31); Females High School (n = 25); Males Center (n = 29); Females Center (n = 24); \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

## CHAPTER V

### DISCUSSION

The present study explored differences in cognitive autonomy among “identified” troubled adolescents and “not-identified” as troubled adolescents. More specifically it examined how adolescents in a residential treatment center would differ in a self-evaluation of cognitive autonomy from adolescents in a traditional public high school. Five elements of the *CASE* inventory including evaluative thinking, voicing opinions, decision-making, self-assessing, and comparative validation were examined.

Results supported the literature that some significant differences between the two adolescent populations would exist. Alternative and possible explanations are provided below in response to the findings of this study. Limitations of this investigation and future recommendations for research are also discussed.

#### Gender Differences

Based on the findings highlighted in the literature presented previously the adolescent populations were examined by gender in order to avoid masking important differences that may play a role in cognitive autonomy. Differences were observed in only ninth-grade females. This gender difference is in accord with current literature on troubled youth. Girls in trouble tend to assume more of a victim posture and, therefore, might score themselves lower on areas that implicate independent thought (Sanderson & McKeough, 2005). Two groups of ninth-grade adolescent females scored themselves dissimilar in all elements of the *CASE* inventory except comparative validation. These

findings may support in part the findings that adolescents in trouble have faulty judgment and are often characterized as poor decision makers by teachers, parents, and policymakers (Cauffman & Woolard, 2005). The implications of this finding might further the understanding to the approach of residential treatment centers with regard to gender in their treatment. While the common assumption that all youth that are in trouble struggle with decision making processes, only the youngest group of females differed significantly. Thus, providing greater assistance to young females who struggle with appropriate decision making and independent thought to facilitate increased evaluation of thought, voicing of opinions, making of decisions and self-assessment seems reasonable.

#### Grades, Reading, and Computer Use

As mentioned in the introduction, it is a challenge to find a true dichotomy of adolescent troubled status in a naturally occurring environment. Thus for the purposes of this study, a group of young people from a public high school were compared to a group of young people enrolled in a residential treatment center designed for troubled youth. In an effort to maximize experimental variability, other variables were controlled. By comparing the groups of respondents based on the type of grades they received in school, by the amount of reading they do during the week, and by the amount of time they spend on the computer it was anticipated based on the previously reviewed literature that the groups would differ in each of these areas. Because media is a very influential environmental factor for this age group, by using a single method single source design, media was the most logical choice for consideration of environmental factors influencing cognitive autonomy.

The area of cognitive autonomy examined in this study that showed the most difference when controlling for time spent in media use manifest significant differences for females with little weekly media consumption was the participants' self-identified ability to evaluate thought. In each case of limited computer use and limited reading time each week (0 – 3 hours) females in the RTC assigned lower scores. The content of their computer use was not asked in the study and future studies could separate homework related activities on the computer from other activities on the computer such as playing games. It is not known whether these students in this sample were using the Internet and computer for homework or for email, chat rooms, surfing, or games. The content area could have a significant determination of how students are using their time and how this relates to cognitive autonomy. It is premature to recommend interventions based on the results of the current study. However, it would be worthwhile to probe the relationship between media use and this dimension of cognitive development involving the evaluation of thoughts for at risk young people. Some literature outlines the deleterious affects of media consumption on the thinking process (Nichols & Good, 2004), but little investigation has focused on the difference between troubled youth with regard to media consumption.

A trend in this study was that the higher the consumption of media (reading and computer use), the higher the scores on the *CASE* inventory. Additionally, those who reported above average grades in general had higher scores on the *CASE* inventory than those who reported average or below average grades.

One interesting finding from this study that merits further discussion was that within weekly computer use at 3 or more hours per week, the male populations were

significantly different. Unlike the other significant findings it was the males at the residential treatment center that rated themselves higher than the traditional public high school males in voicing opinions. Because the RTC allows computer access, but the time spent on computers is vigilantly monitored and computer activities including Internet searches are strictly limited to school work, further inquiry might be warranted about how the computer is used related to voicing opinions. In the RTC, participation in instant messaging, email, and chat rooms is also prohibited. However, it is unknown if these RTC adolescents participated in such cyber activities prior to arriving at the center. If so, it might be argued that the RTC population could have simply maintained the media connection and their readiness to voice opinion could be connected to these open forums of Internet discussion. This may also be a similar case for the high school population.

#### Theoretical Implications

Because age and maturation affect cognition (Baumrind, 1987), it could be assumed that 11<sup>th</sup> graders in general would possess more cognitive autonomy skills than 9<sup>th</sup> graders, who in turn would in general possess more cognitive autonomy skills than adolescents of a younger age. This is not the case with all individuals, though because of biological maturation it is most likely the case with the general population. As adolescents approach adulthood, it is the hope that adolescents will develop cognitive autonomy similar to that of adults.

Data analyses using grade level was decided upon to use as a variable instead of age because of the matching of the two populations. The residential treatment center only had ten 14-year-olds compared to 49 at the high school. Similarly the high school



only had nineteen 17-year-olds compared to 38 at the residential treatment center. Overall, the residential treatment center adolescents had a mean age of 15.9 years compared to 15.3 years at the traditional high school. This may have had an influence on the results. To even out the age discrepancies it was decided to analyze by grade level as opposed to age. Had the sample size been larger and possibly more even across age, age could have been an additional variable to study.

Further analysis of these data might include a comparison within groups as well as between groups to detect in a cross-sectional manner the degree of difference between the age groups regardless of their troubled status. Similarly a longitudinal study of each group would help establish this age and maturation assumption. This would allow assessment of cognitive autonomy at several time periods to be able to compare changes in cognitive autonomy in individual self report scores across time.

The purpose of this study was to determine differences in cognitive autonomy between two groups of adolescents based on their troubled status. The results of this study offer some support that there are differences between the two selected populations. However, the difficulties in conducting this type of research with troubled youth might mask potential differences. A main goal of treatment in this facility is the augmentation of cognitive autonomy skills (R. Bundy, personal communication, August 11, 2006). It is possible that the RTC participants have progressed markedly in their independent thought and thus more closely resemble or out perform their high school counterparts in these areas of cognitive autonomy.

As mentioned before, there may be other factors that play a part in cognitive autonomy in adolescence. These include neuropsychological and personality

characteristics (see Allen et al., 2002; Ge et al., 2001; Moffitt, 1993; Thomas & Chess, 1984; Vermeiren et al., 2002; White et al., 2001). Additionally impaired cognitive functioning may play a role (see Haoken et al., 1998; Loeber & Hay, 1997; Moffitt; Seguin et al., 1995; Vermeiren et al.; White et al.).

There were some content areas in the *CASE* inventory results that demonstrated significant differences. The area of evaluative thinking was significantly different in the two groups of adolescents in ninth-grade females, females 0-3 hours of weekly reading time, and females 0-3 hours of weekly computer use. In addition, the mean scores of the respondents in both groups had positive scores in each of the five content areas of the *CASE* inventory. That is, on a scale from 1 to 5, both groups in each construct for every condition reported means above the midpoint of the scale which would be 3. This shows a positive reporting in evaluative thinking, voicing opinions, decision-making, self-assessing and comparative validation for both groups of adolescents. Using an instrument like the *CASE* inventory could be a starting point to focus on that particular construct. For example, the area of voicing opinions was significantly different among the two groups of adolescents for ninth-grade females and males reporting 3 or more hours of weekly computer use. Because there is not a lot of literature on voicing opinions and how it influences adolescent autonomy, the results from this study have identified some preliminary noteworthy beginnings.

Many adults including parents, teachers, and mental health professionals could learn how to foster, develop, and cultivate cognitive autonomy in adolescents so they are better able to make decisions earlier in life. This will help prepare them for the difficult decisions of an adult nature they will face at school, at home, and with their friends.

Mental health professionals could more effectively assist those adolescents who have already made poor decisions and develop interventions to increase cognitive autonomy and get them back on the right track to becoming successful members of society.

The *CASE* inventory allows researchers to assess cognitive autonomy in adolescents as an initial assessment specifically looking at five different factors that make up the elusive construct of cognitive autonomy. Ultimately no matter what kind of interventions are in place to assist troubled adolescents there will always be certain individuals that cannot or choose not to develop their cognitive autonomy ability. Some adolescents will refuse to be helped, others are determined never to change, or possibly never can change. Although society probably cannot eradicate all problems associated with troubled adolescents, society continues to work with those adolescents in treatment currently and hopes to prevent adolescents in the future from falling into similar patterns. A review of the literature currently available revealed few research studies on cognitive autonomy.

#### Limitations

One limitation of this study is that the adolescents in residential treatment centers at the time of the study were in an alternative environment. Social learning theory (Bandura, 1977) and ecological theory (Bronfenbrenner, 1979) acknowledge the importance of environment. The change that young people go through in residential treatment centers has an impact on environmental issues. This study sought to evaluate their cognitive autonomy at the present time in the residential treatment center which is after the fact when they have had troubles or had participated in offenses against society.

They are in a treatment setting trying to complete treatment and return home to their natural environment. It would be difficult to collect and evaluate data of cognitive autonomy of adolescents who have problems and have not yet identified those problems. In addition those adolescents who have committed crimes and have not been caught would not be able to be evaluated properly.

Another limitation is the self report bias of any survey measure. The potential for inflated responses might be greater in the residential treatment participants because part of their progression in the program stems from an ability to demonstrate decision-making gains. Even though anonymity and confidentiality were promised, these adolescents at the residential treatment center might have biased their responses in an attempt to appear further along in the treatment process to hopefully be released sooner from their treatment program.

As Sanderson and McKeough (2005) assert, both male and female behaviorally troubled adolescents experience difficulties attaining educational successes. Both adolescent populations had students who were below average in school grades. The self ratings of residential treatment center were similar to the traditional high school in reporting above average, average, or below average grades.

#### Recommendations for Future Research and Final Comments

Future research involving cognitive autonomy and troubled adolescence should include several additional approaches. Cognitive autonomy is still an exploratory construct and more research directed in this area will help the field to understand it better. Cognitive autonomy is still an elusive construct to define, study, and understand in its

entirety. Measures in addition to the *Cognitive Autonomy Self-Evaluation (CASE)* could be developed to assess cognitive autonomy. Other inventories could include content area clarifications in reading content, computer use content, and other adolescent constructs in cognitive autonomy.

A general population sample study should be conducted which could establish the norms for each age of adolescence in the five elements of cognitive autonomy. Then comparisons of other sample populations to the normative sample could be conducted and researchers could analyze where deviations occur. This would allow science to be able to pinpoint more accurately how cognitive autonomy is developed and what factors can enhance or diminish cognitive autonomy in adolescents.

Adolescents in the future will be faced with similar challenges to today's youth in addition to some possible challenges that cannot be foreseen. There has been much research in the area of troubled adolescents because of the desires of parents, educators, and others wanting safer and more competent adolescents preparing for adulthood. It seems that incorporating the research completed in cognitive autonomy with the research on troubled adolescents can help us better understand both of these areas. Once we have understood more clearly how cognitive autonomy works, there could possibly be ways we can teach and/or foster cognitive autonomy in adolescence. Research could help younger adolescents to develop cognitive autonomy at earlier ages and also evaluate where juvenile delinquents and those who are seeking treatment are lacking in cognitive autonomy and provide treatment and education so they can possess those cognitive autonomy skills.

## REFERENCES

- Allan Guttmacher Institute. (2006). Facts on American teens' sexual and reproductive health. Retrieved November 15, 2006, from [http://www.guttmacher.org/pubs/fb\\_ATSRH.html](http://www.guttmacher.org/pubs/fb_ATSRH.html)
- Allen, J., Marsh, P., McFarland, C., McElhaney, K., Land, D., & Jodl, K. (2002). Attachment and autonomy as predictors of the development of social skills and delinquency during midadolescence. *Journal of Consulting and Clinical Psychology, 70*, 56-66.
- Arnett, J.J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence through midlife. *Journal of Adult Development, 8*(2), 133-143.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy*. New York: W.H. Freeman.
- Bank, L., Burraston, B., & Snyder, J. (2004). Sibling conflict and ineffective parenting as predictors of adolescent boys' antisocial behavior and peer difficulties: Addictive and interactional effects. *Journal of Research on Adolescence, 14*(1), 99-125.
- Bauman, K.E. (1980). *Predicting adolescent drug use: Utility structure and marijuana*. New York: Praeger.
- Baumrind, D. (1983, October 3). *Why adolescents take chances -- And why they don't*. First commemorative Address sponsored by the National Institute of Child Health and Human Development on the occasion of Child Health Day, Berkeley, CA.
- Baumrind, D. (1987). A developmental perspective on adolescent risk taking in contemporary America. In C. E. Irwin, Jr. (Ed.), *Adolescent social behavior and*

- health* (pp. 93-125). *New Directions for Child Development* (No. 37). San Francisco: Jossey-Bass Social and Behavioral Sciences Series.
- Baumrind, D. (1991). The influence of parenting style on adolescence competence and substance abuse. *Journal of Early Adolescence, 11*(1), 56-69.
- Baumrind, D. (2005). Patterns of parental authority and adolescent autonomy. *New Directions for Child and Adolescent Development, 108*, 61-69.
- Beckert, T. (2005). Cognitive autonomy and self-evaluation in adolescents. *American Association of Behavioral and Social Sciences Perspectives, 8*. Retrieved June 26, 2006, from <http://aabss.org/journal2005/AABSS%20Article%207%20FOSTERING%20AUTONOMY.pdf>
- Beckert, T. (2006, February). *Cognitive autonomy and self-evaluation in adolescence*. Paper presented at the meeting of the American Association of Behavioral and Social Sciences, Las Vegas, NV.
- Bednar, D., & Fisher, T. (2003). Peer referencing in adolescent decision making as a function of perceived parenting style. *Adolescence, 38*, 607-621.
- Bereiter, C., & Scardamalia, M. (1989). Intentional learning as a goal of instruction. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 361-392). Hillsdale, NJ: Erlbaum.
- Beyth-Marom, R., Austin, L., Fischhoff, B., Palmgren, C., & Jacobs-Quadrel, M. (1993). Perceived consequences of risky behaviors: Adults and adolescents. *Developmental Psychology, 29*(3), 549-563.
- Bogenschneider, K., Small, S., & Riley, D. (1990). *An ecological risk focused approach for addressing youth-at-risk issues*. National 4-H Council, Chevy

Chase, MD.

- Bourduin, C., & Henggeler, S. (1990). A multisystemic approach to the treatment of serious delinquent behavior. In R.J. McMahon & R. DeV. Peters (Eds.), *Behavior disorders of adolescence: Research, Intervention, and policy in clinical and school settings* (pp. 62-80). New York: Plenum.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA. Harvard University Press.
- Brown, B. (1990). Peer groups and peer cultures. In S. S. Feldman & G. R. Elliot (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University Press.
- Brown, B., Clasen, D., & Eicher, S. (1986). Perceptions of peer pressure, peer conformity dispositions, and self-reported behavior among adolescents. *Developmental Psychology*, 22, 521-530.
- Caskey, M., & Ruben, B. (2003). Research for awakening adolescent learning. *The Education Digest*, 69, 36-38.
- Cauffman, E., & Woolard, J. (2005). Crime, competence, and culpability: Adolescent judgment in the justice system. In J. Jacobs & P. Klaczynski (Eds.), *The development of judgment and decision-making in children and adolescents*. Mahwah, NJ: Erlbaum.
- Chamberlain, P., & Reid, J. (1998). Comparison of two community alternatives to incarceration for chronic juvenile offenders. *Journal of Consulting and Clinical Psychology*, 60, 624-633.
- Commendador, K. (2003). Concept analysis of adolescent decision making and



- contraception. *Nursing Forum*, 38, 27-35.
- Conger, J.J., & Peterson, A. (1977). *Adolescence and youth: Psychological development in a changing world* (2<sup>nd</sup> ed.). New York: Harper & Row.
- Daly, D.L. (1996, winter). More restrictive may be more effective. *Caring*, 2-9.
- Demetriou, A. (2003). Mind, self, and personality: Dynamic interactions from late childhood to early adulthood. *Journal of Adult Development*, 10(3), 151-171.
- Dishion, T.J., Spracklen, K.M., Andrews, D.W., & Patterson, G.R. (1996). Deviancy in training in male adolescent friendships. *Behavior Therapy*, 27(3), 327-390.
- Dunning, D., Heath, C., & Suls, J. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest*, 5(3), 69-106.
- Dusek, J. (1991). *Adolescent development and behavior* (2<sup>nd</sup> ed.). Englewood Cliffs, NJ: Prentice Hall.
- Elkind, D. (2001). *The hurried child: Growing up too fast too soon*. Boston: Da Capo Press.
- Eisert, D., & Kahle, L. (1982). Self-evaluation and social comparison of physical and role change during adolescence: A longitudinal analysis. *Child Development*, 53, 98-104.
- Farrington, D.P. (2004). Conduct disorder, aggression, and delinquency. In R. Lerner & L. Steinberg (Eds.). *Handbook of adolescent psychology*. New York: Wiley.
- Feldman, S.S., & Weinberger, D. (1994). Self-restraint as a mediator of family influences on boys' delinquent behavior: A longitudinal study. *Child Development*, 65, 195-211.

- Fischhoff, B., Parker, A.M., & Bruin, W. (2000). Teen expectations for significant life events. *Public Opinion Quarterly*, 64(2), 189-205.
- Fleming, M. (2005). Gender in adolescent autonomy: Distinction between boys and girls accelerates at 16 years of age. *Journal of Research in Educational Psychology*, 2, 33-52.
- Foley, R.M. (2001). Academic characteristics of incarcerated youth and correctional educational programs: A literature review. *Journal of Emotional and Behavioral Disorders*, 9(4), 248-259.
- Freud, A. (1970). *The writings of Anna Freud – Volume VI*. New York: International Universities Press.
- Furby, L., & Beyth-Marom, R. (1992). Risk taking in adolescence: A decision-making perspective. *Developmental Review*, 12(1), 1-44.
- Ganzel, A.K. (1999). Adolescent decision making: The influence of mood, age, and gender on the consideration of information. *Journal of Adolescent Research*, 14, 289-318.
- Garber, J., & Little, S.A. (2001). Emotional autonomy and adolescent adjustment. *Journal of Adolescent Research*, 16, 355-371.
- Gardner, W., Sherer, D., & Tester, T. (1989). Asserting scientific authority: Cognitive development and adolescent legal rights. *American Psychologist*, 44, 895-902.
- Ge, X., Donnellan, M.B., & Wenk, E. (2001). The development of persistent criminal offending in males. *Criminal Justice and Behavior*, 28, 731-755.

- Geary, C., & Boykin, K. (1996). *Adolescent autonomy with parents as a predictor of low susceptibility to peer pressure*. Paper presented at the 1997 convention of the Society for Research on Child Development, Washington, DC.
- Giles, D.C., & Maltby, J. (2004). The role of media figures in adolescent development: Relations between autonomy, attachment, and interests in celebrities. *Personality and Individual Differences, 36*, 813-822.
- Gordon, D.E. (1990). Formal operational thinking: The role of cognitive-developmental processes in adolescent decision-making about pregnancy and contraception. *American Journal of Orthopsychiatry, 60*, 346-356.
- Gottfredson, D.C., Harmon, M.A., Gottfredson, G.D., Jones, E.M., & Celestin, J.A. (1996). *Compendium of prevention program outcomes and instrument location*. Ellicott City, MD: Gottfredson Associates.
- Gottfredson, D.C., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Haoken, P., Giancola, P., & Pihl, R. (1998). Executive cognitive functions as mediators of alcohol-related aggression. *Alcohol & Alcoholism, 33*, 47-54.
- Haynie, D.L. (2002). Friendship networks and delinquency: The relative nature of peer delinquency. *Journal of Quantitative Criminology, 18*(2), 99-134.
- Henson, R.K. (2001). Understanding internal consistency reliability estimates: A conceptual primer on coefficient alpha. *Measurement and Education in Counseling and Development, 34*, 177-189.
- Heinze, H., Toro, P., & Urburg, K. (2004). Antisocial behavior and affiliation with

- deviant peers. *Journal of Clinical Child and Adolescent Psychology*, 33(2), 336-346.
- Henggeler, S.W. (1989). *Delinquency in adolescence*. Newbury Park, CA: Sage.
- Jacobs, J.E., & Klaczynski, P.A. (2002). The development of judgment and decision making during childhood and adolescence. *American Psychological Society*, 11, 145-150.
- Kinsman, J., Nyanzi, S., & Pool, R. (2000). Socializing influences and the value of sex: The experience of adolescent girls in rural Masaka, Uganda. *Culture, Health, & Sexuality*, 2(2), 151-166.
- Kirigin, K.A., Braukmann, C.J., Atwater, J.D., & Wolf, M.M. (1982). Evaluation of teaching-family (achievement place) group homes for juvenile offenders. *Journal of Applied Behavior Analysis*, 15(1), 1-16.
- Kroneman, L., Loeber, R., & Hipwell, A. (2004). Is neighborhood context differently related to externalizing problems and delinquency for girls compared with boys? *Clinical Child and Family Psychology Review*, 7(2), 109-122.
- Kurtes-Costes, B., Ehrlich, M.F., McCall, R.J., & Loridant, C. (1995). Motivational determinants of reading comprehension: A comparison of French, Caucasian American, and African American adolescents. *Applied Cognitive Psychology*, 9(4), 351-364.
- Lambert, N.M., & McCombs, B.L. (1998). *How students learn: Reforming schools through learner-centered education*. Washington, DC: American Psychological Association.

- Larson, R.W. (1983). Adolescents' daily experience with family and friends: Contrasting opportunity systems. *Journal of Marriage and the Family*, 45, 739-750.
- Lewis, C. (1981). How adolescents approach decisions: Changes over grades seven to twelve and policy implications. *Child Development*, 52, 538-544.
- Lipsey, M.W., & Howell, J.C. (2004). Promising sanctions programs in a graduated system. *Juvenile Sanctions Center Training and Technical Assistance Bulletin*, 1(4), 1-7. Washington, DC: National Council of Juvenile and Family Court Judges.
- Litenberg, H. (1987). Primary prevention of delinquency. In J.D. Burchard & S.N. Burchard (Eds.), *Prevention of delinquent behavior* (pp. 332-351). Newbury Park, CA: Sage.
- Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin*, 94, 68-99.
- Loeber, R., & Hay, D. (1997). Key issues in the development of aggression and violence from childhood to early adulthood. *Annual Review of Psychology*, 48, 371-410.
- Logan, C.R., DiCintio, M.J., Cox, K.E., & Turner, J.C. (1995, October). *Teacher and student perceptions of classroom practice*. Paper presented at the annual meeting of the Northeastern Educational Research Association, Ellenville, NY.
- Lytton, H. (1995). *Child and family predictors of conduct disorders and criminality*. Paper presented at the meeting of the Society for Research in Child Development, Indianapolis, IN.
- McCord, J. (1979). Some child-rearing antecedents of criminal behavior in adult men.

*Journal of Personality and Social Psychology*, 37, 1477-1486.

- Mertz, M.P. (1975). Understanding the adolescent reader. *Theory into Practice*, 14(3), 179-186.
- Millard, E. (1997). Differently literate: Gender identity and the construction of the developing reader. *Gender & Education*, 9(1), 31-48.
- Moffitt, T.E. (1993). Adolescent-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100, 674-701.
- Moriarty, N., Stough, C., Tidmarsh, P., Eger, D., & Dennison, S. (2001). Deficits in emotional intelligence underlying adolescent sex offending. *Journal of Adolescence*, 24, 743-751.
- Newman, B., & Newman, P. (1987). The impact of high school on social development. *Adolescence*, 22, 525-534.
- Nichols, S., & Good, T. (2004). *America's teenagers – myths and realities*. Mahwah, NJ: Erlbaum.
- Office of Juvenile Justice and Delinquency Prevention. (1999). *1999 National Report*. Retrieved May, 21, 2006, from <http://www.ojjdp.ncjrs.org>
- Patrick, S., & Marsh, R. (2005). Juvenile diversion: Results of a 3-year experimental study. *Criminal Justice Policy Review*, 16(1), 59-73.
- Phillips, E.L., Phillips, E.A., Fixen, D.L., & Wolf, M.M. (1974). *The teaching family handbook*. Lawrence: University of Kansas.
- Prevention more effective in elementary school. (Aug2002). *DATA: The Brown University Digest of Addiction Theory & Application*, 21(8), 5.

- Reed, V., McLeod, K., & McAllister, L. (1999). Importance of selected communication skills for talking with peers and teachers: Adolescents' opinions. *Language Speech and Hearing Services in Schools, 30*, 32-49.
- Rodhama, K., Hawton, K., Evansa, E., & Weatherall, R. (2005) Ethnic and gender differences in smoking, drinking, and drug taking among adolescents in England: A self-report school-based survey of 15 and 16 year olds. *Journal of Adolescence, 28*(1), 63-73.
- Rosenthal, J., Motz, J.K., Edmonson, D.A., & Groze, V. (1991). Descriptive study of abuse and neglect in out-of-home placement. *Child Abuse and Neglect, 15*(3), 249- 269.
- Rubenstein, J.S., Armentrout, J.A., Levin, S., & Herald, D. (1978). The parent-therapist program: Alternate care for emotionally disturbed children. *American Journal of Orthopsychiatry, 48*, 654-662.
- Sanderson, A., & McKeough, A. (2005). A narrative analysis of behaviorally troubled adolescents' life stories. *Narrative Inquiry, 15*(1), 127-160.
- Sanger, D., Long, A., Ritzman, M., Stofer, K., & Davis, C. (2004). Opinions of female juvenile delinquents about their interactions in chat rooms. *Journal of Correctional Education, 55*(2), 120-131.
- Satcher, D. (1999). *Mental health: A report of the Surgeon General*. Washington, DC: U.S. Dept of Health & Human Services.
- Schvaneveldt, J., & Adams, G. (1983). Adolescents and the decision-making process. *Theory into Practice, 22*(2), 98-104.
- Seguin, J.L., Pihl, R., Harden, P., Tremblay, R., & Boulterice, B. (1995). Cognitive and

- neuropsychological characteristics of physically aggressive boys. *Journal of Abnormal Psychology*, 104, 614-624.
- Sinatra, G.M. (2000, April). *From passive to active to intentional: Changing conceptions of the learner*. Paper presented at the American Educational Research Association, New Orleans, LA.
- Smetana, J.G., Campione-Barr, N., & Daddis, C. (2004). Longitudinal development of family decision making: Defining healthy behavioral autonomy for middle-class African American adolescents. *Child Development*, 75(5), 1418-1434.
- Spear, H., & Kulbok, P. (2004). Autonomy and adolescence: A concept analysis. *Public Health Nursing*, 21(2), 144-152.
- Stefanou, C.R., Perencevich, K.C., DiCintio, M., & Turner, J.C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student decision making and ownership. *Educational Psychologist*, 39(2), 97-110.
- Steinberg, L., & Silk, J.S. (2002). Parenting adolescents. In M.H. Bornstein (Ed.), *The handbook of parenting, Vol. 1: Children and parenting*. Mahwah, NJ: Erlbaum.
- Steinberg, L., & Silverberg, S. (1986). The vicissitudes of autonomy in early adolescence. *Child Development*, 57, 841-851.
- Thomas, A., & Chess, S. (1984). Genesis and evolution of behavioral disorders: From infancy to early adult life. *American Journal of Psychiatry*, 141, 1-9.
- Trad, P. (1994). Developmental previewing: Enhancing the adolescent's predictions of behavioral consequences. *Journal of Clinical Psychology*, 50(6), 814-829.
- Vermeiren, R., Schwab-Stone, M., Ruchkin, V., Clippele, A., & Deboutte, D. (2002). Predicting recidivism in delinquent adolescents from psychological and



psychiatric assessment. *Comprehensive Psychiatry*, 43, 142-149.

White, H.R., Bates, M., & Buyske, S. (2001). Adolescence-limited versus persistent delinquency: Extending Moffitt's hypothesis into adulthood. *Journal of Abnormal Psychology*, 110, 600-609.

Wires, J.W., & Barocas, R. (1994). Determinants of adolescents identity development: A cross sequential study of boarding school boys. *Adolescence*, 29(114), 361-379.

Wright, P., & Keple, T. (1981). Friends and parents of a sample of high school juniors: An explanatory study of relationship intensity and interpersonal reward. *Journal of Marriage and the Family*, 43, 559-570.

APPENDIX

# *CASE<sup>©</sup> Inventory*

*An assessment of Cognitive Autonomy and Self-Evaluation*

Copyright © 2006 by Troy E. Beckert. All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the author.

---

# CASE<sup>©</sup> Inventory

---

72

1. Gender  
 Male  
 Female
2. Age \_\_\_\_\_
3. Year in school  
 7<sup>th</sup> grade \_\_\_\_\_  
8<sup>th</sup> grade \_\_\_\_\_  
 9<sup>th</sup> grade \_\_\_\_\_  
10<sup>th</sup> grade \_\_\_\_\_  
 11<sup>th</sup> grade \_\_\_\_\_  
12<sup>th</sup> grade \_\_\_\_\_  
 College Freshman  
 College Sophomore  
 Other
4. Ethnicity  
 White \_\_\_\_\_  
Black  
 Hispanic \_\_\_\_\_  
Asian  
 Other  
Please Specify \_\_\_\_\_
5. School Grades  
 above average  
 average  
 below average
6. Hours spent reading per week  
 None  1 - 2  
 3 - 4  more than 4
7. Hours spent on computer per week for homework.  
 None  0 - 3  
 3 - 6  6 - 10  
 More than 10-6
8. Hours spent on computer per week for fun.  
 None  0 - 3  
 3 - 6  6 - 10  
 More than 10-6

Directions: For each item, circle the answer that best illustrates your thoughts today. Answer all of the questions by clearly circling one of the five choices.

1. If I have something to add to a class discussion I speak up.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
2. I think about the consequences of my decisions.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
3. I look at every situation from other people's perspectives before making my own judgments.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
4. When I disagree with others I share my views.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
5. I need family members to approve my decisions.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
6. I think of all possible risks before acting on a situation.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
7. I like to evaluate my daily actions.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
8. I consider alternatives before making decisions.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
9. I stand up for what I think is right regardless of the situation.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
10. I think about how my actions will affect others.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------
11. I think about how my actions will affect me in the long run.  

Always	Often	Sometimes	Seldom	Never
--------	-------	-----------	--------	-------

12. I like to evaluate my thoughts.

Always                      Often                      Sometimes                      Seldom                      Never

Directions: For each item, circle the answer that best illustrates your thoughts today. Answer all of the questions by clearly circling one of the five choices.

13. I feel that my opinions are valuable enough to share.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

14. I need my views to match those of my parents.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

15. I am good at identifying my own strengths.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

16. It is important to me that my friends approve of my decisions.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

17. There are consequences to my decisions.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

18. I can tell that my way of thinking has improved with age.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

19. At school I keep my opinions to myself.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

20. I think more about the future today than I did when I was younger.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

21. I am best at identifying my abilities.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

22. My decision making ability has improved with age.

Strongly Agree    Agree            Neutral            Disagree            Strongly Disagree

---

## CASE<sup>©</sup> Inventory

---

75

23. I need my views to match those of my friends.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

24. I am good at evaluating my feelings.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

25. I am better at decision making than my friends.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

26. I care about what others think of me.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

27. I am the best judge of my talents.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

---

28. If you were to rate yourself on your "independent thought" today, what score would you assign from 1 - 10 with ten being the most independent? Please provide a brief paragraph to justify your assigned score.

\_\_\_\_\_ Score (from 1 -10).