Relationship Between Academic Achievement and *Miranda* Rights

Comprehension and False Confessions

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Douglas A. Osman

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Abstract
Relationship Between Academic Achievement and Miranda Rights Comprehension and False Confessions
Douglas A. Osman
Naomi E. Goldstein, Ph.D.

Courts ordinarily consider a waiver of Miranda rights valid if the defendant understands the nature of the rights and appreciates the consequences of waiving those rights and offers a confession free from police coercion. Today, juvenile offenders face longer sentences and harsher punishments. Research is needed to evaluate which factors courts should consider in determining the validity of a juvenile’s waiver of rights and how these factors relate to Miranda comprehension and voluntariness of confessions. Previous research has found that age and IQ are significantly related to comprehension of Miranda rights in juveniles; however, research to date has not looked at the relationship between academic achievement and Miranda comprehension. The current research was conducted as part of a larger, ongoing study. For the current study, 73 male participants were assessed using the WASI, WIAT, and MRCI-II. This study hypothesized that academic achievement (composite scores from the WIAT), controlling for age and IQ, would predict Miranda comprehension and self-reported likelihood of offering a false confession. Multiple regression analyses failed to find significant relationships between academic achievement and overall Miranda comprehension, as well as self-reported likelihood of offering a false confession (as measured by the P-CHIP). Standard Language scores and two of the specific Miranda instruments were related, as were Listening Comprehension and FRI. Research and policy implications are discussed, and theories about the overall lack of significant findings are proposed.
1. BACKGROUND AND LITERATURE REVIEW

In *Miranda v. Arizona* (1966), the United States Supreme Court held that a suspect in a criminal case must receive warnings regarding his or her legal rights for his subsequent confession to be admissible as evidence. The *Miranda* warning protects defendants’ rights by guarding against police intimidation and unintentional self-incrimination. The content of the *Miranda* warning was determined by the Supreme Court and was required to contain the following elements: the right to silence, the intent to use suspect’s statements against him in court, the right to a lawyer during questioning, and the right to a court appointed attorney. These rights can be waived by a suspect, but only if the waiver is valid, that is, given knowingly, intelligently, and voluntarily. *Miranda*’s procedural protections originally applied only to adults. The Supreme Court decisions, *Kent v. U.S.* (1966) and *In re Gault* (1967), extended many due process rights in criminal proceedings to juveniles, including the right to *Miranda* protections. In fact, *In re Gault* (1967), the Court opined that "admissions and confessions of juveniles require special caution" and juveniles are at a disadvantage dealing with police because of their vulnerability and immaturity.

Courts ordinarily consider a waiver valid if the defendant understands the nature of the rights and how they would, likely, generally apply to the circumstances. This is the case even when the defendant does not fully know or appreciate the specific consequences of invoking or waiving the right (Grisso, 1981). As the *Miranda* rights were intended, for a valid waiver, the suspect must knowingly waive rights; the suspect must understand the vocabulary of the warning and the basic meaning of the rights that are being waived. The suspect must also waive rights intelligently: appreciate that he is
waiving a constitutional right of great magnitude and appreciate the potential consequences. Finally, the suspect must waive *Miranda* rights voluntarily: the confession must be free from police coercion and intimidation. The burden of proof is always on the government to prove that the waiver was knowing, intelligent, and voluntary (Grisso, 1981).

1.1 The *Miranda* Warning

The *Miranda* warning is worded and administered differently across police jurisdictions. There are differences in complexity of language, and some jurisdictions use non-English versions of the warning (Oberlander & Goldstein, 2001). For instance, some jurisdictions use the word “questioning” instead of “interrogation” (Oberlander, 1998). The wording of an original version of a typical warning was reflected in the instruments that Grisso (1981) created to assess comprehension and appreciation of *Miranda* rights:

1. You do not have to make a statement and have the right to remain silent.
2. Anything you say can and will be held against you in a court of law.
3. You are entitled to consult with an attorney before interrogation and to have an attorney present at the time of the interrogation.
4. If you cannot afford an attorney, one will be appointed for you.

A fifth prong has been added to most warnings which informs suspects that they have the right to stop the police interrogation at any time to ask for an attorney (Oberlander, 1998). Oberlander and Goldstein (2001) described a typical version of a modern warning. The version of the warning uses simplified language and includes the fifth prong:

1. You have the right to remain silent.
2. Anything you say can be used against you in court.
3. You have the right to talk to a lawyer before we ask you any questions and to have him with you during questioning.

4. If you cannot afford a lawyer, one will be appointed for you before questioning.

5. If you decide to answer questions now without a lawyer present, you will still have the right to stop answering at any time until you talk to a lawyer.

Police also use many different methods to inform suspects of their rights (Grisso, 1998). Examples of such methods include reciting the warning carefully and slowly, reciting it in a rapid fashion, giving both a verbal and written warning, giving a written version only, explaining the warning to the suspect, and asking the suspect to explain the warning in his own words. Methods used can vary within the same department, depending on the suspect being questioned and the officer administering the warning. The various methods of administering the warning and various forms of the warning can affect suspects’ understanding of Miranda rights. For instance, a suspect with poor reading skills who is forced to read the warning will have greater difficulty understanding his rights than a suspect with better reading skills in the same situation. He may also have more difficulty understanding the warning than he would if it were read aloud to him.

1.2 Applicability of Miranda Rights to Juvenile Court

Today, juvenile offenders face longer sentences and harsher punishments, as juvenile courts move away from a rehabilitative model and towards a more punitive model of juvenile justice (Allard & Young, 2002). Juveniles also are being tried as adults at an increasing rate (Allard & Young, 2002). The majority of these juveniles are found guilty based on confessions given during interrogation (Kassin & Neumann, 1997).
Therefore, understanding *Miranda* rights becomes particularly important to ensure valid confessions and fair sentencing. Because of their intellectual and emotional immaturity, juveniles are at increased risk for poor comprehension and false confessions. Waivers made by juveniles should be scrutinized carefully to ensure that the waiver is valid and the confession admissible.

Most jurisdictions have adopted a “totality of circumstances” approach for determining whether a juvenile’s waiver of rights was made knowingly, intelligently, and voluntarily (*Fare v. Michael*, 1979). In *Coyote v. U.S.* (1967), the Court listed factors relevant to determining whether a waiver is valid. These factors included age, intelligence, prior experience with police, physical conditions, background, and conduct. Courts also routinely consider level of education, language ability, literacy, IQ, age, mental illness, and legal experience (*Oberlander*, 1998). Although many courts weigh these factors, no individual factor is mandatory for consideration. Research is needed to evaluate which of these factors are critical to determining the validity of a waiver of rights and how these factors relate to *Miranda* comprehension and voluntariness of confessions.

Young people often waive their rights to silence and legal counsel. Grisso and Pomicter (1977) reviewed court records for 491 juveniles, ages six to 17 years, charged with various felonies. They found that over 90% of juveniles waived their rights to silence and legal counsel. Of those that did not waive their rights, almost all were 15 years of age or older. Similarly, a study by Ferguson and Douglas (1970) found that 96% of all juveniles studied waived their *Miranda* rights, and 94% did not intelligently waive a known right. The authors concluded that adolescents were unable to understand the language and concepts embodied in the warnings. If adolescents are waiving their rights
without fully understanding their meanings, their waivers should not be valid. A confession under these circumstances would violate the knowing and intelligent requirements for a valid waiver.

1.3 Conducting *Miranda* Evaluations

Grisso (1998) described two broad classes of variables that should be considered when examining the totality of circumstances: the circumstances of the interrogation and the defendant’s individual characteristics. He sorted circumstances of the interrogation process into several categories, including circumstances of the days prior to the arrest, circumstances at the time of the arrest, circumstances involving transportation to the police station, experiences at the station prior to questioning, parent and youth communications prior to a waiver, and sequence and description of the questioning process. Grisso also explored several factors pertaining to individual characteristics of juvenile suspects including physical condition, age, intelligence, previous experience with the police and courts, and education. Previous research has focused on age, intelligence, and experience with the police, but education has rarely been examined.

Comprehension of verbal messages involves understanding the meanings of each individual word in the message, as well as understanding the meaning conveyed by the specific, semantic context of the entire message (Grisso, 1981). It is difficult to assess comprehension, especially in juveniles who may not have developed the skills necessary to articulate information they know (Grisso, 1981).

In the 1970’s, Grisso (1991) developed, with the help of a panel of lawyers and psychologists, a scientifically reliable and valid set of psychological tests to measure a defendant's ability to waive his *Miranda* rights. These tests are considered the “gold standard” for assessing *Miranda* comprehension. Grisso formed a national panel of
experts to create scoring criteria for determining whether juveniles’ answers represented “full,” “partial,” or “no” understanding of each of the Miranda rights and topics related to the rights.

Four instruments were developed in this original process: The Comprehension of Miranda Rights (CMR), Comprehension of Miranda Rights – Recognition (CMR-R), Function of Rights in Interrogation (FRI), and Comprehension of Miranda Vocabulary (CMV). The CMR, CMR-R, and CMV instruments assess the “knowing” element of a valid Miranda waiver. The CMR requires the individual to paraphrase the components of the Miranda warnings to assess general comprehension of rights. The CMR-R addresses the difficulty some individuals have, particularly youths, verbally expressing information they understand. This instrument consists of statements similar to each Miranda prong (e.g. You can have a lawyer now if you ask for one; You can talk to your social worker before anything happens) and the defendant indicates whether the meaning of the original and reworded rights are the same. The CMV instrument assesses whether the subject can define six critical words used in the Miranda warnings. The FRI attempts to assess the “intelligent” element of a valid waiver. The FRI assesses the examinee's appreciation of the Miranda warnings in the context of the legal process. It evaluates the youth’s grasp of the function and significance of the warnings in three areas: jeopardy associated with interrogation, the function of counsel, and protections related to the right to silence.

The panel of lawyers and psychologists that helped develop these measures described important factors the suspect must appreciate to intelligently waive his rights (Grisso, 1981). In addition to knowing they possess Miranda rights, suspects must also understand what the rights mean and be aware of the issues involved in exercising their rights. For example, an adolescent may know he has the right to a lawyer, but he must
also understand what a lawyer does and the reasons he might want a lawyer. He must appreciate the adversarial process of interrogation and that a defense attorney is there to assist the client, regardless of guilt or innocence. For a right to be considered intelligently waived, the suspect must view the police as adversaries attempting to gain information that will help lead to the suspect’s conviction. The suspect must also know that the attorney is his advocate and that the attorney is required to maintain confidentiality. He must also recognize that the right to silence protects against self-incrimination at every stage of the adjudication process, not just during the interrogation. “If the suspect fails to perceive or misperceives any one of these areas, his decision to waive his rights cannot be made intelligently” (Grisso, 1981, p. 1148).

1.4 Updating the Miranda Instruments

Despite the outstanding respect attorneys, judges, and psychologists have for the utility of Grisso’s instruments, the instruments may be outdated. The original instruments were created and normed in the 1970’s and reflect the language of the St. Louis County, MO version of the Miranda warning. It is unclear whether adolescent norms from the 1970s are generalizable to youth in the 21st century. In addition, the warning used in the instruments is not typical of warnings used in jurisdictions across the United States and, thus, may limit the utility of the instruments in many jurisdictions.

Given the limitations of these earlier instruments, Oberlander, Goldstein, and Grisso revised the assessment tools (Oberlander and Goldstein, 2002). First, the language was generalized to reflect typical Miranda warnings used in jurisdictions across the United States. In addition, since the creation of the original instruments, a fifth prong was added to many Miranda warnings, and this prong was added to each of the relevant Miranda instruments. Further updates involved the addition of a fifth instrument to assess
juveniles’ self-reported likelihood of offering true and false confessions given certain police behaviors; this represents an attempt to assess the voluntariness of a waiver. Finally, the generation of new norms reflects juveniles’ comprehension of their *Miranda* rights during the first decade of the 21st century.

1.5 Research on Juveniles’ *Miranda* Comprehension

Grisso (1981) conducted two studies comparing juvenile and adult performance on structured *Miranda* interviews designed by lawyers and psychologists. Three samples of juvenile subjects and two samples of adult subjects were tested under the same conditions. Age, sex, race, offense history, IQ classification, and socioeconomic level were considered within each sample. Juveniles’ performance was compared with norms obtained from the adult samples. Grisso recognized that results probably underestimated the number of juveniles with inadequate understanding of *Miranda* rights because of the optimal conditions of the laboratory situation compared with the stress of interrogation at police stations. Grisso also indicated that, because each warning was stated separately, subjects would think about and remember each right better than if they heard them all at once.

In each study, juveniles’ responses were examined to determine the percentage of subjects demonstrating inadequate (i.e., zero-credit) understanding of any *Miranda* statement. Results revealed that juveniles under age 15, as a class, did not understand the nature and significance of the right to remain silent and to counsel (Grisso, 1981). Therefore, in general, juveniles under the age of 15 cannot waive rights knowingly and intelligently, and they cannot offer valid confessions. Juveniles younger than 15 years of age also failed to meet the relative (i.e., adult norm) standards for comprehension. Using both the relative and absolute standards, 15 and 16 year olds with IQ scores below 80
also failed to adequately comprehend their rights. Sixteen-year-olds were able to understand their rights as well as 17- to 22-year-old adults. However, one-third to one-half of these adolescents exhibited inadequate comprehension using the absolute criteria.

Results from the CMR, which asked subjects to paraphrase each of the warning statements revealed that juveniles lacked sufficient understanding. Overall, only 20.9% of juveniles received a score indicative of adequate understanding of each of the four warnings (i.e., 2-point responses on all *Miranda* statements). Meanwhile, 55.3% of juveniles manifested no understanding of at least one of the warnings when asked to paraphrase. Similarly, on the vocabulary test, 63.3% of the juveniles completely misunderstood at least one of the crucial words in the *Miranda* warnings. On the test that required no facility in verbal expression (the CMR-R), only 27.6% of the juveniles tested achieved scores indicative of adequate understanding.

The Canadian legal system offers its citizens protections similar to those guaranteed to Americans in the *Miranda* warnings. For instance, Canada’s Young Offender’s Act (1985) provides young people with the right to consult with a parent or other adult before deciding whether to offer a statement to the police. This adult can be a defense attorney or, in addition to a defense attorney, another interested party. This protection is similar to the interested adult requirement of most U.S. states. Suspects also have the right to remain silent and the right to legal counsel. Due to these similarities, it may be useful to examine research regarding Canadian adolescents’ understanding of rights.

In a Canadian study of young people’s understanding of their rights to silence and legal counsel (Abramovitch, Higgins-Biss, & Biss, 1993), subjects ages 10 through 20 were asked to imagine that police suspected them of shoplifting. Half of these subjects
were asked to assume they were guilty, and the other half were asked to assume they were innocent. Subjects were then presented with a waiver form, asked if they would sign, and asked to describe why or why not. They were also asked why they thought another juvenile might make the opposite decision. Responses to these questions were evaluated to determine if each subject understood the basic meaning of the waiver. Understanding was also measured by asking subjects to paraphrase the statements or warnings. Most youthful subjects that did not understand the form agreed to sign it, and most of the subjects that did understand the form refused to sign. A small number of subjects (7.1%) understood the form and agreed to sign anyway.

Another Canadian study examined age differences in children's knowledge of important legal issues regarding legal counsel and aspects of a trial (Peterson-Badali & Abromovitch, 1992). Subjects included both boys and girls from fifth, seventh, and ninth grades, and an equal number of young adults (aged 18-23 yrs). The study consisted of interviews containing 4 scenarios, each depicting a young person who had committed a criminal offense, was charged, and retained a lawyer. Subjects were questioned regarding their knowledge of the role of defense counsel, lawyer-client confidentiality, the meanings of "plead guilty" and "plead not guilty," and what happens during a trial. Results indicated that subjects of all ages understood some aspects of legal knowledge but were ignorant of others. For instance, young people typically understood lawyers were there as “helpers” but did not understand fully the concept of confidentiality. Responses to most questions improved with age. Other studies have also found that juvenile offenders possess a vaguer concept of an attorney’s role than do students with no experience with the legal system (Abramovitch, Higgins-Biss, & Biss, 1993); juvenile offenders are also less likely to perceive lawyers as being “on their side.” Grisso (1981)
found that juvenile offenders often express misconceptions about lawyers, such as attorneys work on behalf of innocent clients but not guilty ones.

Other American (Ferguson & Douglas, 1970; Grisso, 1981, Lawrence, 1983; Wall & Furlong, 1985) and Canadian (Abramovitch, Higgins-Biss, & Biss, 1993; Abramovitch, Peterson-Badali, & Rohan, 1995) studies have explored young people's understanding of due process rights, specifically the rights to legal counsel and to silence. Some of these studies have examined offender samples, while others have focused on non-offenders (typically students). Overall, many participants did not adequately understand their rights, and simplified versions of the warnings did not improve understanding (Ferguson & Douglas, 1970). In addition, while understanding was related to greater assertion of rights (Abramovitch et. al., 1993), education improved surface knowledge of rights but not deeper understanding (Wall & Furlong, 1985). Furthermore, participants' levels of understanding of rights-related vocabulary was overestimated, not only by the participants, but by their lawyers (Lawrence, 1983). Variables such as age (Abramovitch et al., 1995; Grisso, 1980), IQ (Grisso, 1980), and verbal ability (Wall & Furlong, 1985) predicted degree of understanding of rights. However, assertion of rights was unrelated to whether youth were in the justice system or in schools, suggesting that amount of experience with the police and juvenile justice system is not a significant factor in young people's likelihood of waiving rights.

1.6 IQ and Miranda Comprehension Research

Grisso (1981) found that IQ scores were related to Miranda comprehension. 81% of juveniles with IQ scores below 70 offered at least one inadequate response on the CMR. For those with IQ scores between 81 and 90, 58% gave at least one inadequate response. Of those juveniles with IQ scores of 100 or above, only 35% gave at least one
inadequate response on the CMR. Grisso (1980) also found that sex, race, and socioeconomic status (SES) were not significantly related to Miranda rights comprehension overall, but, among juveniles with low IQ scores, black juveniles exhibited poorer comprehension. Amount of prior court experience was also unrelated to understanding the words and phrases in the Miranda warning.

1.7 Educational Achievement and Miranda Comprehension

While previous research has revealed that IQ is clearly related to Miranda comprehension, little research has examined how various academic skills impact Miranda rights comprehension. One study examined a few specific skills and their relationships with Miranda comprehension. Wall and Furlong (1985) found a significant relationship between reading and listening comprehension scores and Miranda rights comprehension. The study used the reading comprehension and auditory vocabulary subtests of the Stanford Diagnostic Reading Test to measure reading and listening comprehension. Miranda comprehension was assessed using the Function of Rights in Interrogation instrument by Grisso (1981), as well as a true-false test based on Grisso’s CMR-R instrument. The authors, to further assess Miranda comprehension, constructed a multiple-choice test and a vocabulary test.

Wall and Furlong (1985) found significant positive relationships between reading and listening comprehension and Miranda comprehension scores. Positive correlations were found between the reading and listening comprehension tests and each measure used to evaluate Miranda rights comprehension. The study also found that students receiving year long law-related education prior to testing reported an unwillingness to waive their rights. Their understanding of Miranda vocabulary and the Function of Rights in Interrogation, however, was inadequate, even after law-related education. The
authors posited that students were more likely to assert their rights because of increased awareness of the importance of rights immediately following the education.

Although this study provides initial insight into the relationship between academic skills and *Miranda* comprehension, most of the *Miranda* instruments used were not validated, as the Grisso measures have been. The study was not conducted with juveniles in the justice system, and the study also limited skills to listening and reading comprehension, omitting other potentially important academic skills, such as reading and oral expression.

Theoretically, children with poor listening comprehension skills should also have difficulty understanding the *Miranda* warning and score poorly on the *Miranda* Comprehension instruments. Grisso (1981) determined the *Miranda* warning in his instruments to be at an eighth grade reading level. A subject scoring below this level on a listening comprehension test, may have difficulty understanding an oral version of the warning. Basic reading and reading comprehension skills should also play an important role in *Miranda* comprehension in jurisdictions where suspects are given a printed version of the warnings and required to read the rights themselves. Despite the logic of this argument, there is little empirical research evaluating the hypothesis, and Grisso (1981) reported in *Commonwealth v. Youngblood*, 307 A.2d 922 (1973) "reading comprehension scores at the fifth grade or higher level were cited in a few cases, resulting in judgments of adequate understanding for *Miranda* warnings.” (p. 65).

Therefore, a study examining the relationships between listening and reading comprehension scores and *Miranda* comprehension might have implications for determining whether a confession was offered knowingly and intelligently and whether it is admissible in court as evidence.
1.8 Research on Juveniles and False Confessions

In addition to diminished comprehension of rights, juveniles are also more suggestible than are adults (Richardson, Gudjonsson, & Kelly, 1995) and, therefore, may be more easily coerced by police during interrogations. This susceptibility may lead a juvenile suspect to confess to a crime that he did not commit. The extent to which false confessions are offered by juveniles is unknown (Kassin, 1997), although several researchers have attempted to determine the risk by drawing on research findings with adult inmates. For instance, in a sample of 205 cases of wrongful convictions, reports of coerced confessions accounted for 8.4% (Rattner, 1988). In a study of 229 inmates in Icelandic prisons, 27 inmates (12%) claimed to have offered a false confession in the past during police questioning (Gudjonsson & Sigurdsson, 1994), and the majority of those inmates (78%) were convicted of the offenses for which they had allegedly offered a false confession. Foster (1969) noted that police interrogation “can produce a trance-like state of heightened suggestibility” causing “truth and falsehood to become hopelessly confused in the suspect's mind” (pp. 690-691).

Given that confessions are one of the most powerful sources of evidence in determining guilt (Kassin & Neumann, 1997), it is important to investigate whether juveniles involved with the justice system are likely to offer false confessions. Gudjonsson and MacKeith (1982) noted that factors encouraging suspects to offer genuine confessions may be similar to those causing a person to offer false confessions. For instance, suspects may be unaware that they are telling a falsehood; their perceptions may be distorted, or they may be deluded for a brief period of time. In the aforementioned situations, a false confession may result from an interaction between a person's mental state, basic personality, intelligence, and all of the environmental
circumstances of the interrogation (Gudjonsson and MacKeith, 1982). Juveniles in general, and juveniles with lower IQ scores in particular, may be at increased risk for offering false confessions under such circumstances.

Research has focused on the suggestibility of juvenile offenders, a characteristic that could contribute to their offering false confessions (Gudjonsson & Singh, 1984). Male juveniles in custody agreed to suggestive questions more often than did adults in similar situations when their performance was subjected to criticism and negative feedback. Subjects read a story and were later asked specific questions about its content. The questions could be moderately leading, affirmative, or offer false alternatives. Subjects then were told they had made several errors and were instructed to answer all of the questions again. They were also asked to be more accurate when answering the questions the second time. The researchers concluded that delinquent adolescents may be particularly responsive to interpersonal pressure during interrogations and that delinquent adolescent boys are more prone to offering untrustworthy testimony when they have been criticized and pressured by interrogators.

1.9 Intelligence and False Confessions

Gudjonsson (1983) also examined the relationship between suggestibility and intelligence. The study used the Gudjonsson Suggestibility Scale (GSS) and the Wechsler Adult Intelligence Scale (WAIS), among other measures. Results of the study indicated that subjects who were “of lower intelligence” were most suggestible. A study by Richardson and Kelly (1995) investigated the relationship between interrogative suggestibility, intelligence, and memory recall. In the study, 58 male, young, adolescent offenders (ages 10 to 16 years, 11 months) in a national children's secure facility were tested with the Gudjonsson Suggestibility Scale and the Wechsler Intelligence Scale for
Children--R (WISC--R). A relationship existed between intelligence and suggestibility, but not between recall memory and suggestibility. The authors proposed that, in terms of police practice and the clinical assessment of forensic cases, adolescent suspects with lower intellectual abilities were inherently more suggestible. As a result, these adolescents might be more vulnerable to offering false testimony or confessions.

1.10 Educational Achievement and False Confessions

While research has focused on intelligence and suggestibility, no studies have examined education or academic skills in relation to false confessions. Given that educational achievement serves as a central factor in assessing the totality of the circumstances for determining the validity of a *Miranda* waiver, the variety of academic skills and their relationships with voluntariness of confessions should be examined. For instance, listening comprehension not only involves the reception of sounds and words, but also understanding of various levels of meaning, such as appreciation of details and ability to form inferential conclusions (The Psychological Corporation, 1991). If a juvenile is unable to understand police during interrogation, he may be more easily “led” to offer the information police are seeking, even if that information is false. There is a tendency for adolescents to agree with statements made by authority figures if they are embarrassed or do not understand (Gudjonsson & Singh, 1984).

Oral expression can also be a factor contributing to false confessions. Adolescents that are unable to express themselves can easily have their meanings misunderstood and confess without realizing they have done so (Gudjonsson & Singh, 1984). Reading comprehension can contribute to false confessions, especially when adolescents are required to sign confessions. The suspect may not comprehend a written confession involving misinterpretation or an incorrect presentation of the facts.
1.11 Special Education and *Miranda* Comprehension

Academic achievement and participation in special education are often examined as elements of the totality of circumstances (Grisso, 1980). Research has examined the link between educational achievement and delinquency. Adjudicated youths typically have histories of academic failure and frustrating educational experiences (Pollard, Pollard, & Meers, 1995). The following factors are considered when determining eligibility for special education (Block, 2000): Specific Learning Disability (i.e., often demonstrated by an IQ score that is significantly higher - at least one standard deviation greater - than the child's achievement test scores), Mental Retardation (i.e., characterized by an IQ score below 70 and adaptive behavior scores placing the child’s functioning level far below his chronological age in two or more areas), emotional disturbance (i.e., requires some underlying emotional or psychological condition which persists over time and results in pervasive unhappiness, an inability to develop and maintain appropriate relationships, or inappropriate behavior under normal circumstances), and other health impaired (i.e., those children who have a chronic health problem such as asthma, epilepsy, Attention Deficit Hyperactivity Disorder, or deafness, that impacts academic performance).

Thirty to 50% of incarcerated youth have disabilities which could qualify them for special education (Casey & Keilitz, 1990; Murphy, 1986). Among incarcerated youth, special education qualification is most frequent when the child has emotional or behavioral disorders, Attention Deficit Hyperactivity Disorder (ADHD), learning disabilities (LD), and/or mild mental retardation (MR) (Rutherford, Bullis, Anderson, & Griller, 2000). Other, less common disabilities among incarcerated youth that would
qualify them for special education include traumatic brain injury and speech and language disorders.

There has been little research on participation in special education and its relationship with *Miranda* comprehension or likelihood of offering false confessions. Goldstein and colleagues (2002) conducted the only study on this topic. Using a small data set, adolescent boys participating in special education had poorer understanding of their *Miranda* rights than did adolescents not previously enrolled in special education. The disabilities that qualify a youth for special education may also interfere with understanding of *Miranda* rights. However, more research is needed to determine if qualification for special education is related to *Miranda* comprehension and what specific deficits may impact *Miranda* comprehension.

1.12 Special Education and False Confessions

Individuals with mental deficiencies are more likely to respond to leading questions containing false or misleading information (Perlman, Ericson, Esses, & Isaacs, 1994). They also have a strong desire to please others, particularly authority figures (Ellis & Luckasson, 1985). Having a mental deficiency is one criteria for eligibility for special education. Therefore, students in special education may be more likely to respond to leading questions and to offer false confessions in order to please authority figures, such as police officers or parents. The study by Goldstein et al., (2002) also examined the relationship between participation in special education and self-reported likelihood of offering false confessions. Although special education did not independently predict likelihood of false confessions, it did moderate the relationship between age and self-reported likelihood of falsely confessing to a crime. Again, more research with a larger sample is needed to determine if participation in special education
is related to likelihood of offering false confessions. In addition, examining the primary
criteria for special education qualification (i.e., the IQ – academic achievement
discrepancy) is central to evaluating this relationship, as many youth who might qualify
for special education have not received proper attention or evaluation (Casey & Keilitz,
1990).
2. HYPOTHESES

2.1 Primary Hypotheses

The primary hypotheses used WIAT composite scores to predict overall Miranda comprehension and false confessions. Although hypotheses were two-tailed, it was expected that lower WIAT composite scores would predict poorer Miranda comprehension and increased self-reported likelihood of offering a false confession:

- WIAT Language scores (controlling for age and IQ) were expected to predict Miranda Comprehension. The language score from the WIAT is a composite of the listening comprehension and oral expression subscales. A Miranda comprehension overall score will be calculated as a weighted average of CMR, CMR-R, and FRI scores.

- WIAT Language scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering false confessions. Self-reported likelihood of offering false confessions is measured by the P-CHIP of the MRCI-II.

- WIAT Reading test scores (controlling for age and IQ) were expected to predict Miranda comprehension. WIAT Reading test scores are a composite of the basic reading and reading comprehension subtest scores.

- WIAT Reading test scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.

- WIAT Writing test scores (controlling for age and IQ) were expected to predict Miranda comprehension. WIAT writing test scores are a composite of spelling and written expression subtest scores.

- WIAT Writing test scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.
2.2 Secondary Hypotheses

The secondary hypotheses used individual WIAT scale scores to predict overall *Miranda* comprehension and false confessions. Although hypotheses were two-tailed, it was expected that lower scores on subtests of the WIAT would predict poorer *Miranda* comprehension and an increased self-reported likelihood of offering a false confession:

- **Basic reading scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Spelling scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Reading comprehension scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Listening comprehension scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Oral expression scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Written expression scores (controlling for age and IQ)** were expected to predict *Miranda* comprehension.
- **Basic reading scores (controlling for age and IQ)** were expected to predict self-reported likelihood of offering a False Confession.
- **Spelling scores (controlling for age and IQ)** were expected to predict self-reported likelihood of offering a false confession.
Reading comprehension scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.

Listening comprehension scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.

Oral Expression scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.

Written Expression scores (controlling for age and IQ) were expected to predict self-reported likelihood of offering a false confession.

2.3 Additional Hypotheses

The additional hypotheses proposed relationships between individual WIAT scale scores and specific *Miranda comprehension instruments*. Although Hypotheses were two-tailed, it was expected that lower subtest scores on the WIAT would predict poorer performance on the specific subtests of the *Miranda Rights Comprehension Instruments*

Basic reading scores (controlling for age and IQ) were expected to predict CMR-II scores.

Basic reading scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Basic reading scores (controlling for age and IQ) were expected to predict FRI scores.

Basic reading scores (controlling for age and IQ) were expected to predict CMV-II scores.

Spelling scores (controlling for age and IQ) were expected to predict CMR-II scores.
Spelling scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Spelling scores (controlling for age and IQ) were expected to predict FRI scores.

Spelling scores (controlling for age and IQ) were expected to predict CMV-II scores.

Reading comprehension scores (controlling for age and IQ) were expected to predict CMR-II scores.

Reading comprehension scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Reading comprehension scores (controlling for age and IQ) were expected to predict FRI scores.

Reading comprehension scores (controlling for age and IQ) were expected to predict CMV-II scores.

Listening comprehension scores (controlling for age and IQ) were expected to predict CMR-II scores.

Listening comprehension scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Listening comprehension scores (controlling for age and IQ) were expected to predict FRI scores.

Listening comprehension scores (controlling for age and IQ) were expected to predict CMV-II scores.

Oral expression scores (controlling for age and IQ) were expected to predict CMR-II scores.
Oral expression scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Oral expression scores (controlling for age and IQ) were expected to predict FRI scores.

Oral expression scores (controlling for age and IQ) were expected to predict CMV-II scores.

Written expression scores (controlling for age and IQ) were expected to predict CMR-II scores.

Written expression scores (controlling for age and IQ) were expected to predict CMR-R-II scores.

Written expression scores (controlling for age and IQ) were expected to predict FRI scores.

Written expression scores (controlling for age and IQ) were expected to predict CMV-II scores.

Summary Hypotheses

Controlling for the relationships among all Verbal WIAT scales (and for age and IQ), some WIAT subtest scores were expected to predict *Miranda* comprehension. Specifically, *I theorized that reading comprehension, listening comprehension and oral expression would significantly predict overall *Miranda* comprehension.* The skills addressed by these subtests are the same skills needed for comprehension of rights. Subjects must be able to understand what they are reading or hearing and must also be able to express their knowledge in order to perform well on the MRCI-II.

Controlling for the relationships among WIAT scales (and for age and IQ), some WIAT subtest scores were expected to predict self-reported likelihood of offering false
confessions. Specifically, I theorized that listening comprehension and oral expression would significantly predict P-CHIP scores. The P-CHIP involves listening to verbal scenarios and determining whether or not the subject would confess in a similar situation. In order to do well on this instrument, the subject must be able to understand the presented situation and express his understanding of the situation.

Controlling for the relationships among WIAT scales (and for age and IQ), some WIAT subtest scores were expected to predict specific MRCI-II scales. Specifically, I theorized that reading comprehension, listening comprehension and oral expression would significantly predict CMR-II scores because this test requires subjects to paraphrase each prong of the warning. This subject must be able to understand what he reads and hears, and then express this understanding verbally. I also theorized that reading comprehension scores would significantly predict CMR-R-II scores. On the CMR-R-II, subjects must be able to understand what they read and decide whether the two sentences have the same meaning. Listening comprehension and oral expression were expected to predict FRI scores. Subjects must be able to comprehend what they are being told and then answer a series of questions in order to do well on the FRI. Reading comprehension and oral expression scores were expected to predict CMV-II scores. The CMV-II requires ability to understand what is read and ability to demonstrate this understanding verbally.
3. METHOD

3.1 Participants

The current research was conducted as part of a larger, ongoing study, in which 73 male participants were assessed. Data from 55 male subjects were collected in Massachusetts and the remaining subjects were tested at a Philadelphia Department of Human Services facility. Participants were adolescents involved with the juvenile justice system, ranging in age from 11 to 19 years (M = 16.6, SD = 1.5). Although Grisso (1981) found that juveniles under the age of 15, as a class, did not understand their rights to remain silent and legal counsel, the current study examined juveniles under the age of 15. This was done to examine the consistency between results from the 1970's and today, as to generate new norms for the updated instruments. The ethnicity breakdown was 28.8% White, 24.7% African American, 21.9% Hispanic, and 5.5% Asian; 17.8% identified as other ethnicity and one youth did not provide information about his ethnicity. In Massachusetts, the state had custody of the youth and the Department of Youth Services gave blanket consent for participation in the study. A denial of participation was mailed to the parents of potential participants under the age of 18 and the parents were given two weeks to respond. If no response was given, passive consent was assumed and youth were included in the study if they gave assent. In Pennsylvania, children ages 13 to 17 were included in this study if they had given their written assent and their parents had given written consent. If parents were unreachable after a good faith effort, a parental consent waiver was employed and the youth’s assent was sufficient for inclusion provided a participant advocate was present during the assessment process to promote the youth’s understanding of his rights as a research participant. The participant...
advocate could deny youths’ participation for any reason (e.g. serious mental health problems). Adolescents, ages 18 and 19, were included in this study if they gave their written consent. Fluency in English was required (measures are in English), but primary language did not affect inclusion/exclusion in the study. Health, gender, race, and ethnicity did not affect inclusion/exclusion from this study. The Massachusetts sample was recruited from a post adjudicative facility in Worcester. Pennsylvania participants were recruited from The Youth Study Center in Philadelphia. The Defender Association identified potential participants from its pool of clients. The participant pool is similar in ethnic diversity, diagnostic conditions, and age to those youths who might require forensic evaluations of capacity to waive Miranda Rights in Philadelphia.

Based on IRB requirements for study approval, subjects were ineligible to participate if they had open cases involving confessions as evidence and/or questions regarding Miranda waivers. Mr. Robert Listenbee, J.D. (via his employees), chief of the juvenile unit of the Defender Association, provided names of eligible participants. He was informed that names of adolescents for whom confessions or Miranda rights waivers were open issues in their cases should not be provided, and he agreed he would not provide the names of such adolescents. He, or his staff, was reminded of this exclusion criteria periodically during the recruitment process.

3.2 Measures

The larger research project includes the administration of the following instruments described below, plus the Massachusetts Youth Screening Inventory – II (MAYSI-II) and the Gudjonsson Suggestibility Scale (GSS). The instruments used in this dissertation were:
1. **Wechsler Abbreviated Scale of Intelligence (WASI)** (The Psychological Corporation, 1992). The WASI is similar in format to and highly correlated with the Wechsler Adult Intelligence Scales (WAIS - III) and the Wechsler Intelligence Scale for Children (WISC – III) (Tulsky & Zhu, 2000). The WASI instrument is a standardized, normed, and validated shorter version of the WAIS - III. It also provides a reliable and valid estimate of verbal, performance, and general intellectual functioning (Kaufman & Kaufman, 2001). In this study, we administered only the Verbal subscales (Vocabulary and Similarities), as non-verbal IQ is of minimal importance in *Miranda* evaluations. The vocabulary subtest measures expressive vocabulary, verbal knowledge, and fund of information. It is also a good measure of crystallized intelligence, as well as general intelligence. The similarities subtest measures verbal concept formation, abstract reasoning ability, and general intellectual ability.

2. **Wechsler Individual Achievement Test (WIAT)** (The Psychological Corporation, 1991). The WIAT represents one of the most broad-based achievement tests available to psychologists. The subscales include measures of Basic Reading, Reading Comprehension, Spelling, Mathematical Reasoning, Numerical Operations, Listening Comprehension, Oral Expression, and Written Expression. The test uses a range of measures that matches many of the elements found in modern school curricula. Average split-half reliability coefficients are 0.97 (0.95 for reading). A stability coefficient of 0.92 was obtained for the reading subtests. Studies of the WIAT, including content-, construct-, and criterion-related validity, reveal that WIAT subtests are measures of the achievement constructs they were designed to assess. We administered only the verbal subtests of this measure (Basic Reading, Reading Comprehension, Spelling, Listening Comprehension, Oral Expression, and Written Expression) because
performance measures are largely irrelevant to \textit{Miranda} comprehension. Although the WIAT – II is now available, we continued to administer the original WIAT for consistency (i. e. when the study was begun, the WIAT – II was unavailable).

3. \textit{Miranda} Rights Comprehension Instruments – II (MRCI-II). The MRCI – II is an objective instrument for assessing an individual’s understanding of the \textit{Miranda} warning. It is a revised version of the \textit{Instruments for Assessing Understanding and Appreciation of \textit{Miranda} Rights} (Grisso, 1998). The original measure was created and normed in the 1970’s and reflected the warning language of St. Louis County, MO. The original instrument is the recommended measure for forensic psychologists conducting evaluations of capacity to waive \textit{Miranda} rights, and it is a standard part of these evaluations (Oberlander and Goldstein, 2001).

With the current measure, Oberlander, Goldstein, and Grisso (In preparation) updated and generalized the language to reflect typical \textit{Miranda} warnings used in jurisdictions across the United States. An additional sub-test to assess children’s likelihood of offering hypothetical confessions given certain police behaviors was also added. In addition, we are generating norms to reflect juveniles’ comprehension of their \textit{Miranda} Rights during the first decade of the 21\textsuperscript{st} century. Test-retest reliability for each of the five instruments produced an average correlation coefficient of .697 with a range from .578 to .776 (Goldstein, Condie, Kalbeitzer Mesiarik, & Geier, in preparation). Test-retest for overall \textit{Miranda} Comprehension produced a correlation of .785. Interrater reliability produced an intraclass correlation coefficient of .97 for the CMR-II and an intraclass correlation coefficient of .98 for the CMV-II. The average Kappa coefficient for the five CMR-II items was .956 (Goldstein et. al, in preparation). The MCRI - II consists of five sub-tests:
a. Comprehension of Miranda Rights - II (CMR-II) (adapted from the CMR, Grisso, 1981). The CMR - II assesses adolescents’ understanding of the standard Miranda warning. It asks respondents to paraphrase each of the five prongs of the Miranda warning. Specific instructions for inquiry are included. Responses are scored according to standardized rules.

b. Comprehension of Miranda Rights –Recognition - II (CMR-R-II) (adapted from the CMR-TF, Grisso, 1981). The CMR-R-II consists of 15 same-or-different items divided into five sets of three items. Each set corresponds to one of the five elements of the Miranda warning. The purpose of the instrument is to assess participants’ understanding of each element of the Miranda warning by their abilities to identify whether preconstructed sentences are semantically identical to Miranda warning statements.

c. Function of Rights in Interrogation (FRI) (Grisso, 1981). The FRI uses a structured interview format with visual stimuli to enhance the context. The stimuli are four standard drawings depicting relevant police, legal, and court procedures. A brief verbal scenario is provided by the examiner to further establish the context for responding. After each question, the interviewer follows inquiry rules, if it is necessary to employ clarifying questions. Standardized scoring criteria are used. Two items were omitted from the original instrument, Grisso’s original version of the FRI has not been otherwise altered.

d. Perceptions of Coercion during Holding and Interrogation Procedures (P-CHIP). The P-CHIP follows the format of the FRI, using a structured interview format with visual stimuli to enhance the context. The stimulus is an FRI drawing depicting a relevant police holding and interrogation scenario. Brief verbal scenarios are
provided by the examiner to further establish the context for responding and to describe hypothetical police behaviors. After each scenario, the participant is asked to rate three dimensions relating to the likelihood of giving a statement to the police at a particular juncture in the holding and interrogation process and following certain police behaviors: 1) whether the hypothetical suspect would speak to the police about the crime; 2) the hypothetical suspect’s stress level during that scenario; and 3) the likelihood of the hypothetical suspect offering a false confession during that scenario. Participants are frequently reminded to pretend they are the suspect.

e. Comprehension of Miranda Vocabulary (CMV - II). The CMV - II assesses adolescents’ understanding of the words used in the standard Miranda warning and a number of legal words have been added to the original instrument. The CMV - II asks respondents to define key terms from the Miranda warning in their own words. Specific instructions for inquiry are included and responses are scored according to standardized rules.

5. Brief Demographic Survey. Using this survey, we asked the child basic information about him/herself, such as primary language, number of parents in the home, number of times in detention, and memory of discussing Miranda rights (see attached survey for the full list of questions). Participants were asked survey questions following completion of the Miranda instrument. The sequence of these two instruments was established to avoid educating children about their rights before completing the MRCI-II.

Estimated time to complete the protocol was approximately three hours (range in time of administration, 1 hour 50 minutes to 3 hours). To prevent fatigue, data were collected during two sessions, each approximately an hour-and-a-half long. Each session had scheduled breaks, and other breaks were available at the participant’s request.
During one session, the MRCI-II and demographic survey were administered. During the other session, the WASI and WIAT were administered. The order of administration of these two sessions does not matter and depended on availability of instruments.

Existing MAYSI-II data was used as participants were assessed using this instrument at the time of their admission to each facility.
4. METHOD OF ANALYSIS

In all analyses, age and IQ were controlled to determine if WIAT test scores independently predicted *Miranda* comprehension (i.e., as noted earlier, age and IQ are related to *Miranda* Comprehension). The MRCI-II consists of five subscales; for the purposes of data analysis, scores on the CMR-II, the CMR-R-II, and FRI were aggregated by averaging the total scores on these three instruments to produce an overall *Miranda* comprehension score for each participant. The CMV-II was not included in this overall score because it focuses on understanding specific legal terms and not on general understanding or appreciation of the rights themselves. The P-CHIP was omitted from the overall score because this instrument measures self-reported likelihood of offering a false confession, not *Miranda* comprehension. Using multiple regression analyses to test the primary hypotheses, a study with 73 participants, a conservative alpha (0.01), and a medium effect size ($r = 0.3$) produces a power of .80. Therefore, if an anticipated effect existed, there was an 80% chance it would be detected in the current study. A conservative alpha was used to account for the large number of a priori hypotheses. Despite the large number of analyses, a Bonferroni correction was not utilized in this study for the following reasons: 1) Bonferroni corrections are designed for post-hoc, exploratory analyses (Shaffer, 1995); 2) all analyses in the current study were made a priori; and 3) all analyses in the current study were based on theory and previous research, resulting in confirmatory, not exploratory, analyses. Nonetheless, to account for the large number of analyses and to reduce Type I error, a conservative alpha of .01 was used, and two tailed tests were employed. Ideally, a small number of analyses containing many predictor variables would have been used, but a large enough sample size could not
be obtained to produce adequate power. Therefore, predictor variables are examined separately. In addition, greater emphasis was placed on Effect sizes than p values.

Cohen (1977) defined small, medium, and large effect sizes for multiple regression as $r = 0.1, 0.3, \text{ and } 0.5$, respectively. Based on previous research, medium to large effect sizes were expected.

Primary Hypotheses/Analysis Summary

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<td>overall MC</td>
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<td>PCHIP</td>
<td>WIAT Reading</td>
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<tr>
<td></td>
<td>WIAT writing</td>
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+ age + IQ

One variable from column 1 was regressed on one variable from column 2 (controlling for age and IQ). This process was repeated until each scale from column 1 was regressed on each scale from column 2 (controlling for age and IQ). It was expected that composite test scores on the WIAT would predict performance on the overall *Miranda Rights Comprehension Instruments* score and on the PCHIP.
Secondary Hypotheses/Analysis Summary

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<td>PCHIP</td>
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<td>listening comprehension</td>
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<td>oral expression</td>
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One variable from column 1 was regressed on one variable from column 2 (controlling for age and IQ). This process was repeated until each scale from column 1 was regressed on each scale from column 2 (controlling for age and IQ). It was expected that subtest scores on the WIAT would predict performance on the overall *Miranda Comprehension Instruments* score and on the PCHIP.

Each variable from column 1 was simultaneously regressed on all WIAT subtests (basic reading, spelling, reading comprehension, listening comprehension, oral expression, written expression) and on age and IQ.

Additional Hypotheses/Analysis:

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<tr>
<td>CMR-II</td>
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One variable from column 1 was regressed on one variable from column 2 (controlling for age and IQ). This process was repeated until each scale from column 1 was regressed on each scale from column 2 (controlling for age and IQ).
Summary Hypotheses/Analyses

Overall *Miranda* comprehension was regressed simultaneously on all WIAT scales (basic reading, spelling, reading comprehension, listening comprehension, oral expression, and written expression) and age and IQ.

False confessions (P-CHIP) was regressed simultaneously on all WIAT scales (basic reading, spelling, reading comprehension, listening comprehension, oral expression, and written expression) and age and IQ.

Each Individual scale from the MRCI-II (CMR-II, CMR-R-II, FRI, CMV) was regressed simultaneously on all WIAT scales (basic reading, spelling, reading comprehension, listening comprehension, oral expression, and written expression) and age and IQ.
5. RESULTS

Male juvenile offenders in this study produced a mean verbal IQ score of 83 (SD = 13.66), ranging from 55 to 114, and an average overall Miranda comprehension score of 1.5 (SD = .29), with Miranda Comprehension ranging from 0.77 to 1.95. Regression analyses revealed that both age and verbal IQ were related to Miranda comprehension, \( b_{age} = .05, SE_{age} = .02, p = .01, b_{VIQ} = .02, SE_{VIQ} < .01, p < .01 \) (see Figure 1). Controlling for age, higher IQ was associated with better Miranda comprehension among male juvenile offenders, and controlling for IQ, older adolescents understood their rights better than young adolescents. Inspecting Figure 1, the relationship between age and overall Miranda comprehension score does not appear linear. Perhaps this is due to inconsistencies between the Pennsylvania and Massachusetts samples. Subjects from Pennsylvania were, in general, older than those from Massachusetts. In fact, all of the 19-year-old participants and 75% of the 18-year-old participants in this study were from Pennsylvania. Additionally, all of these 18 and 19-year-old Pennsylvania participants had verbal IQ scores below 87, placing them in the two lowest categories. In addition, the PA sample had lower verbal IQ scores than the MA sample, again, potentially skewing the data. Because of the small number of PA participants thus far collected, analyses could not be run separately by state. However, this will be done for the larger study, once the data from 200 PA participants has been collected.

Participants in this study produced a mean P-CHIP score of 18.96 (SD = 27.66), with a range from 36 to 156 (higher scores represent greater likelihood of offering a false confession). Regression analyses revealed that age and IQ were also independently related to self-reported likelihood of offering a false confession at the .01 level (\( b_{age} = - \))
6.54, \( SE_{age} = 2.16, p < .01, b_{VIQ} = -0.60, SE_{VIQ} = .24, p = .01 \). Controlling for age, higher IQ was associated with lower P-CHIP scores, indicating lower self-reported likelihood of offering a false confession. Controlling for IQ, older participants also scored lower on the P-CHIP, saying that they were less likely to offer a false confession.

5.1 Primary Hypotheses

Composite Academic Achievement scores and Miranda comprehension

To test the primary hypothesis that a relationship existed between academic achievement and *Miranda* comprehension, multiple regression analyses were conducted. No relationship was found between WIAT standard reading (SR) scores and overall *Miranda* comprehension when controlling for age and IQ \((b_{age} = .06, SE_{age} = .02, p < .01, b_{VIQ} = .01, SE_{VIQ} < .01, p < .01, b_{SR} = .01, SE_{SR} < .01, p = .02)\) (see Table 1). In addition, regression analyses revealed no significant relationship between WIAT standard Language (SL) scores and overall *Miranda* comprehension when controlling for age and verbal IQ \((b_{age} = .05, SE_{age} = .02, p < .01, b_{VIQ} = .01, SE_{VIQ} < .01, p < .01, b_{SL} = .01, SE_{SL} < .01, p = .02)\). A regression analysis was also conducted to evaluate whether there was a relationship between WIAT Standard Writing (SW) scores and overall *Miranda* comprehension. No relationship was found \((b_{age} = .05, SE_{age} = .02, p < .01, b_{VIQ} = .01, SE_{VIQ} < .01, p < .01, b_{SW} < .01, SE_{SW} < .01, p = .46)\).

Composite Academic Achievement scores and self-reported likelihood of offering a false confession

Multiple regression analyses were also performed to determine whether there was a significant relationship between academic achievement (measured by composite scores of the WIAT) and self-reported likelihood of offering a false confession, measured by the P-CHIP, controlling for age and IQ. No relationship was found between Standard
Language (SL) and P-CHIP scores ($b_{age} = -7.48$, $SE_{age} = 2.10$, $p < .01$, $b_{VIQ} = -.46$, $SE_{VIQ} = .30$, $p = .13$, $b_{SL} = -.10$, $SE_{SL} = .26$, $p = .71$), Standard Reading (SR) score and P-CHIP scores ($b_{age} = -7.07$, $SE_{age} = 2.13$, $p < .01$, $b_{VIQ} = -.78$, $SE_{VIQ} = .36$, $p = .04$, $b_{SR} = .24$, $SE_{SR} = .28$, $p = .38$), and Standard Writing and P-CHIP scores ($b_{age} = -7.08$, $SE_{age} = 2.16$, $p < .01$, $b_{VIQ} = -.78$, $SE_{VIQ} = .31$, $p = .01$, $b_{SW} = .31$, $SE_{SL} = .24$, $p = .20$) (See table 2).

Evaluation of Null Findings

To evaluate the interpretability of results regarding the relationship between Standard Writing scores and overall Miranda comprehension, the obtained effect size was calculated, and a post-hoc power analysis was run for the primary hypothesis. Using Cramer’s V, an effect size of .004 was obtained (Cohen, 1977); in order to produce adequate power (.80) with an effect size this small, 779 subjects would be needed. Thus, these results support the null hypothesis; Standard writing scores were not related to overall Miranda comprehension. A similar procedure was conducted to evaluate the results regarding P-CHIP scores and WIAT composite scores. For standard reading scores, using Cramer's V, an effect size of .025 was obtained (Cohen, 1977); in order to produce adequate power (.80) with an effect size this small, 256 subjects would be needed. For standard language test scores, Cramer's V produced an effect size of .003 (Cohen, 1977) which would require 1040 subjects to produce adequate power (.80). Standard writing test scores produced an effect size of .04 using Cramer's V (Cohen, 1977). An effect size this small would require 191 subjects to produce power of .80. These results all support the null hypotheses: WIAT composite scales appear unrelated to both Miranda comprehension and self-reported likelihood of offering false confessions.

5.2 Secondary Hypotheses

Individual academic achievement scores and Miranda comprehension
Regression analyses were also performed to test the secondary hypotheses, that individual academic skills (measured by WIAT individual scales) predict overall Miranda comprehension. There was no relationship between Basic Reading (BR) score and overall Miranda comprehension when controlling for age and IQ ($b_{age} = .06$, $SE_{age} = .02$, $p < .01$, $b_{VIQ} = .01$, $SE_{VIQ} < .01$, $p < .01$, $b_{BR} < .01$, $SE_{BR} < .01$, $p = .05$) (See table 3). Similarly no relationship was found between overall Miranda Comprehension and the following individual scales: Spelling (S) ($b_{age} = .05$, $SE_{age} = .02$, $p < .01$, $b_{VIQ} = .01$, $SE_{VIQ} < .01$, $p < .01$, $b_{S} < .01$, $SE_{S} < .01$, $p = .15$), Reading Comprehension (RC) ($b_{age} = .05$, $SE_{age} = .02$, $p < .01$, $b_{VIQ} = .01$, $SE_{VIQ} < .01$, $p < .01$, $b_{BR} = .01$, $SE_{BR} < .01$, $p = .03$); Listening Comprehension (LC) ($b_{age} = .05$, $SE_{age} = .02$, $p < .01$, $b_{VIQ} = .01$, $SE_{VIQ} < .01$, $p < .01$, $b_{LC} < .01$, $SE_{LC} < .01$, $p = .06$); Oral Expression (OE) ($b_{age} = .05$, $SE_{age} = .02$, $p < .01$, $b_{VIQ} = .02$, $SE_{VIQ} < .01$, $p < .01$, $b_{OE} < .01$, $SE_{OE} < .01$, $p = .57$) and written expression ($b_{age} = .05$, $SE_{age} = .02$, $p = .01$, $b_{VIQ} = .02$, $SE_{VIQ} < .01$, $p < .01$, $b_{WE} < .01$, $SE_{WE} < .01$, $p = .87$) (See table 3).

Individual academic achievement scores and self-reported likelihood of offering false confessions

Individual academic skills (i.e. WIAT scales) were also unrelated to self-reported likelihood of offering a false confession, as measured by the P-CHIP. No relationship was found between P-CHIP score and the following scales: Basic Reading (BR) ($b_{age} = -6.48$, $SE_{age} = 2.29$, $p = .01$, $b_{VIQ} = -.67$, $SE_{VIQ} = .26$, $p = .01$, $b_{BR} = .02$, $SE_{BR} = .20$, $p = .91$); Spelling (S) ($b_{age} = -6.56$, $SE_{age} = 2.20$, $p < .01$, $b_{VIQ} = -.65$, $SE_{VIQ} = .34$, $p = .06$, $b_{S} < .01$, $SE_{S} = .28$, $p = .99$), Reading Comprehension (RC) ($b_{age} = -7.40$, $SE_{age} = 2.10$, $p < .01$, $b_{VIQ} = -.64$, $SE_{VIQ} = .37$, $p = .09$, $b_{RC} = .13$, $SE_{RC} = .35$, $p = .72$); Listening Comprehension (LC) ($b_{age} = -6.56$, $SE_{age} = 2.16$, $p < .01$, $b_{VIQ} = -.67$, $SE_{VIQ} = .32$, $p = .04$,
\[ b_{LC} = .02, SE_{LC} = .26, p = .94 \]; Oral Expression (OE) \( (b_{age} = -7.42, SE_{age} = 2.10, p < .01, b_{VIQ} = -.53, SE_{VIQ} = .25, p = .04, b_{OE} = -.01, SE_{OE} = .19, p = .98) \) and written expression \( (b_{age} = -7.17, SE_{age} = 2.15, p < .01, b_{VIQ} = -.64, SE_{VIQ} = .25, p = .01, b_{WE} = .21, SE_{BR} = .17, p = .22) \) (See table 4).

Evaluation of Null findings

Effect sizes were calculated to evaluate the interpretability of results regarding the relationship between individual WIAT scales and Miranda comprehension and P-CHIP scores. Using Cramer’s V, effect sizes of less than .001 were obtained (Cohen, 1977) for each analysis, suggesting the null findings were due to the very weak relationship between variables and not to insufficient sample size. Thus, these results support the null hypotheses; individual scales of the WIAT did not appear to be related to Miranda comprehension or self-reported likelihood of offering a false confession.

5.3 Additional Hypotheses

Composite Academic Achievement scores and Individual Miranda comprehension instruments

To test the hypotheses that academic achievement scores would predict specific aspects of Miranda comprehension, analyses were conducted regressing WIAT composite scores on individual Miranda comprehension instrument scores. Participants in this study produced a mean WIAT standard language test score (SL) of 93 (SD = 15.71), a mean CMR - II score of 7.37 (SD = 2.48). Regression analyses revealed that, controlling for age and verbal IQ, WIAT standard language test scores were related to CMR - II scores \( (b_{age} = .31, SE_{age} = .16, p = .06, b_{VIQ} = .08, SE_{VIQ} = .02, p < .01, b_{SL} = .05, SE_{SL} = .02, p < .01) \) (see figure 2). Controlling for age and verbal IQ, higher standard language test scores predicted higher CMR - II total scores.
Male juvenile offenders in this study produced a mean WIAT standard language test score (SL) of 93 (SD = 15.71), and a mean *Miranda* vocabulary (CMV-II) score of 22.88 (SD = 5.71). Regression analyses revealed that, controlling for age and verbal IQ, WIAT standard language test scores were related to CMV-II scores ($b_{age} = .90, SE_{age} = .32, p < .01, b_{VIQ} = .24, SE_{VIQ} = .05, p < .01, b_{SL} = .11, SE_{SL} = .04, p < .01$) (see figure 3). Controlling for age and verbal IQ, higher standard language test scores predicted higher *Miranda* vocabulary scores.

None of the other WIAT composite scores were related to individual comprehension instruments (see table 5). To evaluate the interpretability of results regarding the relationship between Standard Language scores and the Comprehension of *Miranda* Rights - Recognition (CMR-R) test, effect sizes were calculated and a post-hoc power analysis was run. Using Cramer’s V, an effect size of less than .001 was obtained (Cohen, 1977); in order to produce adequate power (.80) with an effect size this small, well over 3127 subjects would be needed. Thus, these results support the null hypothesis; Standard language scores did not appear to be related to CMR-R score.

Individual academic achievement scores and individual Miranda comprehension instruments

Regression analyses were utilized to test additional hypotheses that individual WIAT subtests were associated with specific *Miranda* Comprehension instruments. This was found to be the case in terms of listening comprehension and FRI scores. Participants in this study produced a mean WIAT listening comprehension (LC) score of 78.65 (SD = 16.36) and a mean FRI score of 20.10 (SD = 3.59). Regression analyses revealed that, controlling for age and verbal IQ, WIAT listening comprehension subtest scores were related to FRI scores ($b_{age} = .60, SE_{age} = .26, p = .02, b_{VIQ} = .07, SE_{VIQ} = .04,$}
p = .08, $b_{LC} = .08$, $SE_{LC} = .03$, p < .01) (see figure 4). Controlling for age and verbal IQ, higher Listening comprehension subtest scores predicted higher FRI total scores.

Other individual WIAT tests were unrelated to specific *Miranda* Comprehension instruments at the .01 level when controlling for age and IQ (see table 6). Some of the individual tests were significant at the .05 level but did not meet the significance criteria set for this study. These scales include Basic reading and CMR - II ($b_{age} = .40$, $SE_{age} = .170$ p = .02, $b_{VIQ} = .11$, $SE_{VIQ} = .02$, p < .01, $b_{BR} = .03$, $SE_{LC} = .02$, p = .04); Listening Comprehension and CMR-II ($b_{age} = .27$, $SE_{age} = .16$, p = .09, $b_{VIQ} = .09$, $SE_{VIQ} = .02$, p < .01, $b_{LC} = .04$, $SE_{LC} = .02$, p = .04), Reading Comprehension and FRI ($b_{age} = .65$, $SE_{age} = .26$, p = .02, $b_{VIQ} = .04$, $SE_{VIQ} = .04$, p = .36, $b_{RC} = .11$, $SE_{RC} = .04$, p = .02), and Listening Comprehension and Miranda Vocabulary ($b_{age} = .84$, $SE_{age} = .33$, p = .01, $b_{VIQ} = .24$, $SE_{VIQ} = .05$, p < .01, $b_{LC} = .10$, $SE_{LC} = .04$, p = .01). The other individual WIAT tests were unrelated to the specific *Miranda* comprehension instruments. In fact, using Cramer's V, effect sizes of less than .001 (Cohen, 1977) were obtained for the following scale pairs: oral expression and CMR-R, oral expression and CMR-R, basic reading and FRI, oral expression and FRI, written expression and FRI, written expression and CMR-II, written expression and CMR-II, spelling and FRI, written expression and CMV-II, and basic reading and vocabulary. In each of these situations, more than 3127 subjects would be needed to produce adequate power (.80) with such a small effect size.
6. DISCUSSION

Results of this study showed that academic achievement, when controlling for age and IQ, was not significantly related to Miranda Comprehension or self-reported likelihood of offering a false confession. This would seem to indicate that age and IQ are more important predictors of Miranda comprehension than academic achievement.

Currently, the totality of circumstances approach outlines nine circumstances to be considered in determining the ability of juveniles to waive Miranda rights knowingly, intelligently, and voluntarily (Fare v. Michael C., 1979): 1) the juvenile's age; 2) the juvenile's education; 3) the juvenile's knowledge of the substance of the charge and the nature of the right to remain silent and the right to an attorney; 4) whether the juvenile has been allowed contact with parents, guardian, attorney, or other interested adult; 5) whether the interrogation occurred before or after indictment; 6) the interrogation methods used; 7) the length of the interrogation; 8) whether the juvenile has refused to give statements voluntarily on prior occasions; and 9) whether the juvenile has repudiated an extrajudicial statement at a later date. The current study, as well as the lack of extant research supporting a link between academic functioning and comprehension of Miranda rights, suggests that age and IQ play a more important role in juveniles’ capacities to waive Miranda rights.

Reading Abilities and Miranda Comprehension

It seems intuitive that abilities, such as reading skills, would be related to comprehension of Miranda rights. In fact, overall reading ability and reading comprehension scores have been cited in a few cases, resulting in judgments of adequate understanding of Miranda warnings (Grisso, 1981). Results of this study, however,
found no relationship between reading comprehension and overall *Miranda* comprehension score. Perhaps the null finding is due to the nature of the tasks involved. The reading composite score consists of the Basic Reading and Reading Comprehension subtests. Basic Reading is designed to assess ability to decode letters. Reading comprehension is composed of printed passages followed by orally presented questions. In this respect, it is similar to the *Miranda* comprehension instruments. However, reading comprehension involves much longer passages and also assesses ability to recognize cause and effect (both stated and implied), draw conclusions, sequence events, compare and contrast, and predict events and outcomes. The *Miranda* instruments used for overall comprehension score are CMR-II, CMR-R-II, and FRI. The CMR-II asks participant's to tell the examiner what each of the *Miranda* warnings mean. While reading skills would play a part in this instrument, it seems that the ability to put the statements in the participant's own words would be a more important factor in their score. This is supported by the fact the Standard Language scores were related to CMR-II scores in this study. The CMR-R-II relies less on verbal expression by asking participants to state whether various interpretations of the warnings are the same or different from the Miranda warning presented. The FRI presents a stimulus picture and a vignette is read. This instrument does not require any reading by the participant, therefore reading and comprehension skills would not be expected to play an important role in the score obtained. This is supported by the fact that listening comprehension scores were significantly related to FRI scores in this study.

Despite a lack of significance for the primary hypotheses, a number of interesting findings arose from this study. Standard Reading scores and Standard Language scores did not significantly predict overall *Miranda* Comprehension at the .01 level (the alpha
set prior to the study) but were significant predictors at the .05 level. Nonetheless, post hoc analyses revealed effect sizes (Cohen, 1977) of $r = 0.1$ and 0.06 respectively, not the medium to large effect sizes that would be expected based on previous research (Wall and Furlong, 1985). Standard Language and Standard Reading scores were not significant predictors of Miranda comprehension when controlling for age and IQ. Standard Writing scores produced an even smaller effect size of .004, supporting the null hypothesis that Standard Writing did not predict Miranda comprehension. The instruments used to test Miranda comprehension do not require subjects to write anything, therefore this finding seems logical. Although reading and oral language skills are required, writing is not.

WIAT composite scores also failed to predict self-reported likelihood of offering false confessions, as measured by the P-CHIP. Whether or not an adolescent will offer a false confession may have more to do with the individual's suggestibility than with reading or language ability. Bruck and Melnyk (2004) examined the research on children's suggestibility over the past decade. They found that, although language ability was related to suggestibility, many other factors were related as well. These included intelligence, creativity, self-concept, self-efficacy, maternal attachment, and the parent-child relationship. The current study controlled for verbal IQ, which was found to be a significant predictor of P-CHIP score. This supports previous research linking intelligence to suggestibility (Gudjonsson & Sigurdsson, 1994). The current study also revealed that academic achievement and language skills were not independently related to self-reported likelihood of offering a false confession. The other factors listed, such as self-concept and self-efficacy, may be more important to suggestibility than the language abilities measured by the WIAT. For the current sample, verbal IQ was a more reliable predictor of self-reported likelihood of offering a false confession.
This study did produce some significant findings regarding academic achievement and the specific *Miranda* comprehension instruments. For instance, Standard language scores, when controlling for age and IQ, were related to CMR-II scores. The CMR-II requires subjects to paraphrase the *Miranda* warning statements. In the current study, subjects with higher standard language scores produced higher CMR-II scores. The standard language composite is made up of listening comprehension and oral expression subtests. It is logical that these skills would be extremely important and useful in completing a task that requires listening to the examiner and producing a statement that paraphrases what was said. Participants that are better able to listen (listening comprehension) and put things in their own words (oral expression) would be expected to do well on this task. Other skills would be less important and unrelated to the CMR-II.

As noted earlier, the CMR-II does not require the ability to read nor to understand the written statements, rather, the ability to express verbally the meaning of recited rights central to the scoring of the CMR-II.

Standard language scores also were found to be related to CMV-II scores. CMV-II measures the subject's understanding of the individual vocabulary words used in the *Miranda* warning. Again, language skills would be most useful in producing definitions with minimal prompts. Additionally, the listening comprehension subtest, which is one of the subtests that makes up standard language, measures a subject's receptive vocabulary skills. Again, being able to listen to prompts and produce a definition would require many of the same skills measured in the listening comprehension and oral expression subtests of the WIAT.

**Relationship between Specific Academic Skills and Specific Aspects of *Miranda* Comprehension**
In terms of the association between individual WIAT tests and specific *Miranda* Comprehension instruments, Listening Comprehension was related to FRI total scores. Higher listening comprehension scores were associated with higher FRI scores. The FRI assesses subjects' grasp of the magnitude of the warnings by presenting a narrative and then presenting questions asking subjects to apply the warnings to the hypothesized situations. Listening skills would play a very large part in the successful completion of this task. In addition to the obvious aspect of ability to hear and process verbal information, listening comprehension also taps a subject's ability to make inferences and compare and contrast items (The Psychological Corporation, 2001) which is necessary for appreciating the consequences of waiving rights (i.e. successful performance on the FRI).

Although not significant with the stringent alpha set, there were instances in which individual WIAT subtests predicted specific *Miranda* Comprehension instruments at the .05 level of significance. These included associations between basic reading and CMR-II, listening comprehension and CMR-II, reading comprehension and FRI, and listening comprehension and CMV-II. Although we will draw no conclusions about these tenuous findings give the nonsignificant result, future research should examine these potential relationships further. Many of the skills required for the WIAT subscales overlap with the skills required for the specific, associated measures of *Miranda* Comprehension.

Some interesting results supporting the null hypothesis emerged from this study. For instance, Standard Language scores were found to be unrelated to CMR-R-II. This actually shows the discriminant validity of the CMR-R-II. The CMR-R-II was designed to test subjects' understanding of *Miranda* rights by asking them to identify
whether preconstructed sentences are semantically identical to *Miranda* warning statements. The CMR-R does not rely on a subject's ability to express the meaning of the warnings in his or her own words and was created so that subjects with poor expressive skills but adequate understanding could still demonstrate their knowledge. The fact that the individual test, oral expression, which, along with listening comprehension, contributes to standard language score, was found to be unrelated to CMR-R-II, adds to this finding. Listening or Reading Comprehension should play at least a minor role in an individual's ability to determine whether two sentences that were simultaneously read aloud and provided in writing have the same meaning. Again, the CMR-R-II is intended to measure a subject's understanding of the statements that make up the *Miranda* warning, not the subject's ability verbally express that understanding.

Similarly, the fact that Basic Reading was found to be unrelated to FRI total score also adds to the validity of this instrument. The FRI assesses the subject's understanding and appreciation of the meanings of *Miranda* warnings in the context of the legal system (Grisso, 1981). It is not a test of the subject's reading ability; in fact it uses an interview format, and no reading is required of the subject. Thus Basic Reading skills, even if they vary widely from subject to subject, should not be expected to play a unique role in FRI performance. However, the fact that Oral Expression was found to be unrelated to FRI total score is somewhat surprising. It may be due to the fact that many of the responses on the FRI require only one or two word answers and, therefore, do not require the explaining and instructional skills tapped by the oral expression subtest (The Psychological Corporation, 1991).

Written expression was also found to be unrelated to FRI total score. This is to be expected, as the FRI, like all of the instruments measuring *Miranda*
Comprehension, requires no writing by subjects. The skills required for written expression, such as editing and developing an idea into discussion (the Psychological Corporation, 1991), are not designed to be addressed by the FRI.

An initially surprising finding is that Basic Reading and CMV-II scores were unrelated. It was expected that reading skills would predict comprehension of *Miranda* vocabulary. Upon closer inspection, however, these findings make sense. Basic Reading requires phonological and decoding skills. Although vocabulary has been shown to be related to reading comprehension (Nation and Snowling, 2004), the skills measured by the Basic Reading subtest do not rely on subjects’ vocabulary. Basic Reading is more a test of a subject's ability to sound out words rather than understand their meaning (The Psychological Corporation, 1991).

**Limitations on Research Findings**

Although results of this study may provide information to policy makers and evaluators interested in juveniles’ comprehension of *Miranda* rights, there are several limitations. First, subjects in this study were already placed in detention facilities and therefore, many had been interrogated and most should have met with their lawyer who may have educated them about some of their rights (e.g. right to a lawyer, information shared can be used against you). This study did not test youths’ knowledge and understanding of *Miranda* rights at the time of interrogation. They also may have learned more about their rights as a result of going through the legal process. The findings of this study may, therefore, overestimate youths’ true Miranda rights comprehension. However, previous research (Grisso, 1981) found that Miranda comprehension did not improve as youths had more experience with the legal system. A recent study (Goldstein, et. al., 2003) also found that self-reported likelihood of offering a false confession was not
related to the number of times subjects reported that they had heard the *Miranda* warning. For the aforementioned reasons, this study also may underestimate youths’ likelihood of offering a false confession.

Another limitation of this study is that only male juvenile offenders were included, and, therefore, results may not generalize to female youthful offenders. Previous research (Grisso, 1981) found no gender differences in *Miranda* comprehension among juveniles, but this finding has yet to be replicated with the updated instruments. The larger study of which the current study was a part should reveal whether gender differences exist with the updated instruments. The larger study also should allow for analyses by state. As mentioned previously, participants from Pennsylvania made up the majority of 18 and 19 year olds in this study and younger youth were predominantly from MA. The PA participants also, as a group, fell in the lower categories in terms of verbal IQ. Factoring states into analyses may reduce error and clarify relationships between variables such as age and *Miranda* comprehension.

Another potential limitation of this study is the use of verbal IQ as a measure of overall IQ. Other aspects of intelligence, such as problem solving and memory, not measured by verbal IQ, may play a role in comprehension of *Miranda* rights. These skills were not assessed due to time limitations. It takes several hours to administer the study’s instruments, and at times, tasks could lead to subjects’ frustration, which could lead them to perform at less than their true abilities. Although future studies should attempt to incorporate other aspects of intelligence and decision making, these aspects are not considered in the totality of circumstances and are, therefore, less relevant than IQ to the totality of circumstances.
Finally, because the P-CHIP is a relatively new instrument, its validity needs to be established further. Given the extensive research demonstrating inconsistencies between how people believe they would act and how they actually behave (Leo and Ofshe, 2001) it is unclear whether youth would actually behave in the manner they believe they would during actual interrogations. This consistency is particularly questionable given that the stress of a research study is far less than the pressure a suspect faces during a real interrogation. Therefore, data on self-reported likelihood of offering a false confession should be interpreted cautiously until further data can be collected to establish the relationship between P-CHIP scores and actual confession behavior.

Nevertheless, people are much more suggestible during stressful situations (Gudjonsson, 1986), and few people believe they would confess to something they did not do, particularly if it carries severe, negative consequences. Therefore, although the consistency between P-CHIP scores and actual confessions should be examined, its likely P-CHIP scores underestimate the frequency of false confessions youth would offer during interrogations. Future research should also attempt to examine Miranda and P-CHIP performance during times of stress. Such a study could utilize techniques similar to those used by Kassin and Norwick (2004), in which participants were divided into two groups. One group was given an envelope with explicit directions on how to steal a $100 bill from a drawer in a nearby classroom. The other group was instructed to simply open and close the empty drawer without taking anything. Afterward, each participant was escorted to an interrogation cubicle and informed by a “detective” that he/she was suspected of a recent theft in the building. The interrogator was blind to each participant’s guilt or innocence Similarly, another study (Kassin and Kiechel, 1996), using another technique to induce the stress of an interrogation, found that presenting
false incriminating evidence can lead people to accept guilt for a crime they did not commit. Subjects were accused of damaging a computer by pressing a wrong key during a reaction time task. All were innocent and initially denied the charge. A confederate then stated whether she did or not witness the pressing of the wrong key. Procedures such as these attempt to create a level of anxiety and pressure similar to that of a real interrogation situation; such a study with juveniles could improve the validity of the P-CHIP.

**Research and Policy Implications**

The results of this study have implications for courts determining juveniles' abilities to waive *Miranda* rights and offer admissible confessions. Traditionally, courts have used age and IQ as two of the most important factors in weighing "the totality of circumstances." This study supports the use of these factors in making these determinations. Courts also consider academic history when weighing circumstances as well. Although a previous study using a subset of the current data (Goldstein et al, 2003) found that special education status was associated with *Miranda* Comprehension, the current study shows that academic skills may not play a role in determining comprehension.

The totality of circumstances approach considers special education as one of the elements to determine whether juveniles are competent to waive *Miranda* rights. The data in the present study is the same that was used in the Goldstein et. al. (2003) study that found a link between *Miranda* comprehension and P-CHIP false confessions likelihood scores. As stated earlier, there are many factors that could lead to a student being placed in special education classes. Among these are specific learning disability (demonstrated by an IQ score that is significantly higher, at least one standard deviation
greater, than achievement test scores. Forty-seven percent of participants in the present study reported being enrolled in special education classes. This suggests that the current sample is representative of incarcerated youths, as previous research has found that 30 to 50% of incarcerated youths have disabilities that could qualify them for special education (Casey & Keilitz, 1990). Participants that identified themselves as being in special education had an average verbal IQ score of 80. Scores in this low range would require extremely low achievement scores. Therefore, it seems unlikely that these participants were placed in special education because of a large discrepancy between IQ and achievement. An alternative explanation for the link between participation in special education and comprehension of *Miranda* rights concerns emotional and behavior disorders.

Research has shown that incarcerated juveniles are more likely to be diagnosed with emotional or behavior disorders (Quinn, Rutherford, Leone, Osher, & Poirier, 2005). As stated earlier, special education qualification is frequent among incarcerated youth with such emotional and behavior disorders (Rutherford, Bullis, Anderson, & Griller, 2000). Therefore the link between special education and *Miranda* comprehension may have little to do with academic achievement. Previous research also has linked mental illness with a lower likelihood of understanding one's legal rights (Viljoen, Roesch, & Zapf, 2002). These findings, along with the current study, seem to suggest that participation in special education, due to behavior disorders or mental illness, may play a greater role in comprehension of legal rights than does academic achievement.

This study also has policy implications related to the admissibility of confessions by juvenile suspects. As noted earlier, without an empirical basis, courts have recognized reading comprehension scores of fifth grade or higher as indicative of adequate
understanding of *Miranda* rights (Grisso, 1981). This study found no link between overall comprehension of *Miranda* rights and reading comprehension scores, although it did support previous research linking age and IQ with *Miranda* comprehension. As was reported earlier, very little research has been published investigating the relationship between academic achievement and *Miranda* comprehension. The paucity of published studies does not necessarily mean that such research has not been conducted. It may be the case that such studies have been conducted but a lack of significant results prevented publication. Previous research has shown that non-significant results are both less likely to be submitted for publication and less likely to be published if submitted (Atkinson, Furlong, & Wampold, 1982). Reading comprehension has been cited in court cases as being a factor and has been recommended to forensic psychologists as essential information when conducting evaluations (Greenfield, Dougherty, Jackson, Podboy, & Zimmerman, 2001; Helms, 2003). It seems logical, based on this knowledge, that research would have been conducted to support these assertions, although we have not identified any unpublished studies in this area.

Similarly, research on suggestibility and false confessions do not mention academic achievement as a related factor and instead focus on intellectual abilities (Richardson, Gudjonsson, & Kelly, 1995). The current study found a link between age, IQ, and self-reported likelihood of offering a false confession, as measured by the P-CHIP. Again, a lack of published studies related to academic achievement and false confessions or suggestibility could be due to null findings of the relationship between these variables in previous studies. Once again, we have no evidence of such unpublished studies.
At this point, it is premature to make policy decisions based on inconsistencies between the Massachusetts and Pennsylvania samples and on the fact that data collection is not yet completed. The remainder of the Pennsylvania data must be collected before definitive conclusions or policy implications can be drawn. If, after all data is collected, there appears to be little or no relationship between academic achievement and understanding of Miranda rights, policy makers and judges should not use these scores as a factor in determining whether or not an individual adequately understood his/her rights during an interrogation. With replication, the current study may benefit juvenile defendants, defense attorneys, prosecutors, and forensic evaluators with a legal/clinical interest in adolescent comprehension of Miranda rights. As noted earlier, without an empirical basis, courts have recognized reading comprehension scores of fifth grade or higher as indicative of adequate understanding of Miranda rights (Grisso, 1981). Furthermore, experts have indicated that Reading Comprehensions scores are essential information for forensic evaluators in determining whether Miranda rights were waived knowingly and intelligently (Greenfield, Dougherty, Jackson, Podboy, & Zimmerman, 2001; Helms, 2003). Results of this study suggest that these scores may not be so essential and certainly appear less important than the age and IQ of the juvenile defendant.
LIST OF REFERENCES


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Table 1. Composite academic achievement scores and *Miranda* comprehension
Table 2. Composite academic achievement scores and self-reported likelihood of offering a false confession

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Table 3. Individual academic achievement scores and *Miranda* comprehension

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Figure 1. Mean Overall Miranda Rights Comprehension Score by Age and Verbal IQ
Figure 2. Mean CMR-II Score by Standard Language

![Bar chart showing average CMR-II scores for different standard language scores for the sample.](chart)
Figure 3. Mean CMV Score by Standard Language

- Low Standard Language Score for Sample (<87)
- Average Standard Language Score for Sample (87-100)
- High Standard Language Score for Sample (>100)
Figure 4. FRI Score by Listening Comprehension

Average FRI Score

Low Listening Comprehension Score for Sample (<71)
Average Listening Comprehension Score for Sample (71-85)
High Listening Comprehension Score for Sample (>85)
Douglas A. Osman currently works as a primary therapist at the Devereux Foundation’s Brandywine Campus in Glenmoore, Pennsylvania. He provides clinical and behavioral services to children and adolescents age 7 to 14 with serious behavior and emotional difficulties. He completed his APA accredited internship at the Devereux Foundation as well. Douglas is an experienced clinician and researcher. He has worked at the Youth Study Center in Philadelphia where he evaluated potential clients and completed intake procedures on new clients for male and female juvenile offenders in a detention facility. Further responsibilities included conducting assessments, developing treatment protocols, and providing individual, group, and family treatment. Douglas was also manager of his research laboratory, where he assisted in designing and implementing mental health assessment and treatment protocols for adjudicated females in a court-mandated intensive day treatment program. He also supervised and trained undergraduate research assistants in the collection, entry, and analysis of data and trained clinicians in treatment and assessment protocols. Douglas has also coauthored of five articles in peer review journals and presented 11 papers and symposia at national psychology conferences.