

**Then and Now: Comparing Juveniles' Comprehension of the *Miranda* Warning in**

**the 1970s and Today**

A Thesis

Submitted to the Faculty

of

Drexel University

by

Christina L. Riggs Romaine

in partial fulfillment of the

requirements for the degree

of

Master of Science in Clinical Psychology

January 2008

**DEDICATIONS**

For my three March men;

to Dan, for being there every day,

to Dad, for believing in and supporting all my pursuits,

and

to Mr. G, for planting the idea so long ago, and believing it was possible ever since.

## ACKNOWLEDGEMENTS

I am very grateful to the many people who have been involved in this project, and without whom, it would not have been possible.

First, I would like to thank my thesis committee for their guidance and support. Dr. Naomi Goldstein, my advisor and mentor, thank you for your time and commitment to this project and my training. I am so thankful to have been involved in the larger *Miranda* project, and am very grateful for the research training and experience you have provided. Thank you, Dr. Kirk Heilbrun, for your invaluable comments and advice on this project. Laval Miller-Wilson, thank you for so graciously giving your time to this project and providing a much needed legal perspective.

I would also like to thank the many others who have been involved in this project. Many graduate students and research assistants gave countless hours to gathering and entering data for this project. Specifically, it would not have been possible without the efforts of Heather Zelle, Jennifer Serico, and Anna Heilbrun. Thank you all. I would also like to express my gratitude to Dr. David DeMatteo for the time, insight and guidance he generously provided.

Finally, I am grateful to the amazing team of graduate students with whom I am privileged to work. Many thanks to Kimberly Hoffman and Amanda Zelechowski for their wisdom and constant support.

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**ABSTRACT**

Then and Now: Comparing Juveniles' Comprehension of the *Miranda* Warning in the 1970s and Today.

Christina L. Riggs Romaine

Naomi E. Goldstein, Ph.D.

In addition to use in research, Grisso's *Instruments for Assessing Understanding and Appreciation of Miranda Rights* (1998) have been used to help evaluate the validity of *Miranda* waivers in court proceedings and are commonly cited in testimony. Despite their extensive use, the admissibility of the instruments has been questioned in some cases because of the outdated vocabulary used and the assumption that *Miranda* comprehension has improved since the 1970s. To examine this assumption, the results of Grisso's 1970s study were compared to data gathered from 183 21<sup>st</sup> century juvenile offenders. Twenty-first century youth were tested using the *Miranda Rights Comprehension Instruments-II*. Results indicated that scores on the two measures were comparable, and that juveniles today do not have better understanding of their rights than their counterparts in the 1970s. In fact, on some measures of understanding they showed significantly worse understanding. Verbal IQ continued to be the strongest predictor of *Miranda* rights comprehension in the 21<sup>st</sup> century. As in 1970s study, no relationship between *Miranda* comprehension and previous experience with the police was observed.

## 1 BACKGROUND AND LITERATURE SUMMARY

### 1.1 The *Miranda* Warning

#### 1.1.1 Evolution of the *Miranda* Warning

The Fifth Amendment to the U.S. Constitution ensures that a citizen will never, “be compelled in any criminal case to be a witness against himself.” Four appeals questioning how this right applied to police interrogations were addressed simultaneously by the U.S. Supreme Court in *Miranda v. Arizona* (1966) (Oberlander & Goldstein, 2001). In each of these cases, as in 50% of criminal cases (Wrightsmann & Kasson, 1993), the defendant’s confession was a central piece of evidence. The appeals questioned the circumstances under which these confessions were obtained. Were the defendants aware of their rights, including the rights to silence and to counsel? If not, could their confessions be used against them in court? As noted by Chief Justice Warren, these cases raised important questions about “the restraints society must observe consistent with the federal Constitution in prosecuting individuals for crimes” (*Miranda v. Arizona*, 1966, p.1609).

The Court had previously noted the questionable trustworthiness of coerced confessions and ruled that a “totality of circumstances” test must be used to evaluate the defendant’s waiver of his or her right against self-incrimination (*Dickerson v. U.S.*, 2000). This test examines the voluntariness of a confession, including relevant information about the defendant’s age, intelligence, criminal history, and the situation in which the confession is obtained (*Coyote v. U.S.*, 1967; *Johnson v. Zerbst*, 1938). In *Malloy v. Hogan* (1964) the Court ruled that this test is rooted in citizen’s Fifth and Fourteenth Amendment rights and, therefore, applies to states. A confession is

admissible if it is given knowingly, intelligently and voluntarily by the defendant. In addition, the Court had previously ruled that confessions could not be coerced with “brutality and violence” (*Brown v. Mississippi*, 1936). Shortly before the *Miranda* case came before the Court, it was decided that the police cannot deny a defendant the right to speak with an attorney and that the meeting cannot be delayed in an attempt to obtain a confession (*Escabedo v. Illinois*, 1964).

In its *Miranda* decision, the Court upheld and extended the principles of the “totality of circumstances” and other prior cases by ruling that a suspect in police custody must be explicitly notified of his or her rights if a confession is to be admissible as evidence. Specifically, the warning must include reminders that (a) the suspect has the right to remain silent, (b) statements made can be used against the suspect in court, (c) the suspect has the right to consult with an attorney and have the attorney present during questioning, and (d) the suspect has the right to a court-appointed attorney if the suspect cannot afford one (*Miranda v. Arizona*, 1966). These warnings have become known as the *Miranda* warnings and are often referred to as a suspect’s *Miranda* rights.

The dissenters in the five to four *Miranda* ruling expressed concern that guilty individuals would be freed, confessions would be increasingly inadmissible, and conviction rates would drop (*Miranda v. Arizona*, 1966). Nonetheless, the majority opinion prevailed. In his assenting opinion, Chief Justice Warren noted that, “Unless adequate protective devices are employed to dispel the compulsion inherent in custodial surroundings, no statement obtained from the defendant can truly be the product of his free choice” (*Miranda v. Arizona*, 1966, p.1619). The debate over the effects of *Miranda* on confessions continues. There is little empirical evidence comparing

confession rates before and after the 1966 ruling, and scholars continue to debate the long- and short-term effects of the decision (Cassell, 1996).

The *Miranda* ruling stipulates that a defendant's waiver of his or her rights must be knowing, intelligent, and voluntary (*Miranda v. Arizona*, 1966). Factors used to determine the validity of a waiver are listed in *Coyote v. U.S.* (1967) and include "the age, background, and intelligence" of the defendant (p.308). Although judges tend to use similar criteria across cases (Oberlander & Goldstein, 2001), there is no list of mandatory criteria that must be considered. In addition, cutoff scores for measures that might be used to evaluate specific criteria have not been established by case law (Grisso, 1986). Other factors often considered by the courts include experience with the legal system, presence of mental illness, language ability, and level of education (Frumkin, 2000; Grisso, 1998; Oberlander, 1998). Courts may also consider the method of *Miranda* warning delivery; the number of times the warning was given; the method used by the police to assess the defendant's understanding of the warning; and the physical setting of questioning, including who was present and what interrogation tactics were used (Grisso, 1986; Oberlander 1998).

The *Miranda* ruling has been further defined in subsequent Supreme Court rulings. For instance, in 1986, the Court ruled, in *Colorado v. Connelly*, that a waiver of *Miranda* rights is valid and voluntary as long as it is not given in response to police coercion in such a way that police conduct caused the confession (Melton, Petrila, Pythress & Slobogin, 1997). Police coercion has generally been interpreted by the courts to mean physical coercion (Oberlander, 1998). Some cases have recognized the role of psychological coercion (e.g., *Blackburn v. Alabama*, 1960) but others have found

confessions admissible despite evidence of police pressure and persuasion (*Rhode Island v. Innis*, 1980). Likewise, tactics such as, suggesting that a confession will make things go better for the suspect, exaggerating the evidence against a suspect, and informing the suspect that a co-suspect has confessed, have all been allowed by lower courts (*Miller v. State*, 1986; *Miller v. Fenton*, 1986; *U.S. v. Velasquez*, 1989; *State v. Braun*, 1973) .

In 1968 Congress attempted to return to pre-*Miranda* methods by passing law 18 U.S.C. 3501 that required the judge to determine the validity of a waiver on a case-by-case basis. Judges were to evaluate the “totality of circumstances” surrounding the confession, including whether the defendant knew he or she was a suspect and that anything said could be used in court. This test preserved some elements of the *Miranda* warning, but 18 U.S.C. 3501 eliminated the requirement that the warning be delivered to the defendant in order for a confession to be admissible. This law contradicted the *Miranda* ruling and could only be upheld if the Court overturned *Miranda*. The 10<sup>th</sup> Circuit court ruled, in 1975, that 3501 determined the admissibility of a confession in the federal court system (*U.S. v. Crocker*). This ruling and 3501 itself were largely ignored until 2000, when they were used as a challenge to *Miranda* in *Dickerson v. U.S.* (2000) (Oberlander & Goldstein, 2001).

In *Dickerson*, referring in part to *stare decisis* (to let stand that which was decided), the Court upheld *Miranda* in a seven to two ruling, stating that Congress could neither negate *Miranda* with further laws, nor pass laws contrary to any Supreme Court ruling. Only one majority opinion was given, a rare showing of unanimity by the Court, in which Chief Justice Rehnquist, who had long criticized *Miranda*'s lack of a constitutional basis, stated, “*Miranda*, being a constitutional decision of this Court, may

not be in effect overruled by an act of Congress, and we decline to overrule *Miranda* ourselves” (p.1).

Despite the clear 2000 upholding of *Miranda*, opinions on the application of *Miranda* continue to be varied and complicated. In 2003, the Court ruled that an individual’s rights are not violated by police asking questions without administering the *Miranda* warning, if formal charges are never pressed against the individual (*Chavez v. Martinez*, 2003). They also ruled that physical evidence can not be suppressed solely because it is acquired based on voluntary statements given before the *Miranda* warning is administered (*U.S. v. Patane*, 2003).

Evolving police tactics have also raised questions about the timing and necessity of the *Miranda* warning. In 1985, the Court ruled that statements given after the *Miranda* warning is received and waived are admissible, even if police asked the same questions before giving the *Miranda* warning (*Oregon v. Elstad*, 1985). In 2004 the Court qualified this opinion, ruling that if the police deliberately use the pre- and post-*Miranda* questioning technique (i.e., suspects are first questioned, then given the *Miranda* warning, and then questioned again until the pre-warning answers are obtained again), the break between questioning sessions must be sufficient to let the person understand his or her rights and know that he or she does not have to talk to the police (*Missouri v. Seibert*, 2004). In the case of *Seibert*, the Court found that the break between questioning sessions had not been sufficient and deemed the confession given during the second questioning session inadmissible. Although issues surrounding *Miranda* continue to be debated by both critics and proponents, its place in U.S. culture and law was firmly established in *Dickerson v. U.S.* (2000).

### 1.1.2 *Miranda* in Practice

Although the content of the warning was decided in *Miranda* and affirmed by *Dickerson*, the wording of the actual warning varies across jurisdictions (Goldstein, Condie, Kalbeitzer, Osman, & Geier, 2003). Some jurisdictions employ non-English versions for suspects whose native languages are not English, and jurisdictions vary in the complexity of the wording (Oberlander & Goldstein, 2001). Since the 1960s, when the first warnings were established by jurisdictions, many have simplified the wording of the warnings they use. For example, “lawyer” is often used rather than “attorney”, “talk” is frequently used in place of “consult,” and “questioning” is often used instead of “interrogation” (Oberlander, 1998). An example of a typical warning from the 1970s can be seen in the Grisso (1981) instruments used to evaluate comprehension 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.

Since that time, most jurisdictions have added a fifth prong to the warning, informing suspects that even if they choose to answer police questions, they may stop at any time and request a lawyer (Oberlander, 1998). A typical modern *Miranda* warning in Massachusetts reads:

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 or her 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 (Oberlander & Goldstein, 2001).

At present, no research has examined if and how the addition of the fifth prong has impacted *Miranda* comprehension.

Police use a variety of methods to deliver the *Miranda* warning. Such methods include slowly and carefully delivering the warning verbally, repeating the warning quickly in a rote fashion, giving both a verbal and written warning, giving a written warning without any verbal warning, asking the suspect to read the warning (either aloud or silently), and asking the suspect to paraphrase the warning (Grisso, 1998).

Documentation of the delivery of the *Miranda* warning also varies. Some police departments keep detailed records about the delivery of the warning and suspects' comprehension, including videotaping the warning's administration. Others keep hardly any record of the waiver of rights (Oberlander, 1998). Police are not required to assess the suspect's comprehension of the *Miranda* warning, but many departments use procedures ranging from seeking a yes or no answer about understanding to asking the suspect to paraphrase each element of the warning to verify the suspect's comprehension (Grisso, 1998).

In some jurisdictions the warning is repeated at designated points in police officers' interactions with suspects (e.g., at the time of arrest, when processed at the



police station, before questioning begins) (Grisso, 1981, 1998). The amount of attention paid to the warning's administration can vary greatly (Oberlander & Goldstein, 2001). Courts have evaluated, on a case by case basis, the importance and relevance of officers' attention to *Miranda*. In *Colombe v. Connecticut* (1961) the U.S. Supreme Court decided that there is no absolute standard for deciding whether a confession is coerced. In order for a confession to be considered coerced, it must result from police misconduct, such as the use of physical force, the deprivation of basic necessities (e.g., food, sleep), threats of harm, or promises of leniency (see also Kassin, 1997). Following in this tradition, lower courts have upheld the validity of a waiver, despite the police officer's hasty reading of the warning, because the suspect had an extensive arrest history and was familiar with arrest procedures (*State v. Prater*, 1970).

Popular police training manuals (e.g., *Criminal Interrogation and Confessions*; Inbau, Reid, Buckley & Jane, 2004) offer instruction on how to obtain confessions and include specific interrogation strategies, such as implied threats, promises, and incentives. Many cases have come before the courts questioning to what extent these strategies are permissible. As discussed previously, the U.S. Supreme Court has found confessions admissible despite police pressure and persuasion. Tactics allowed include pressuring the suspect to confess so that others are not harmed, leading the suspect to believe a different crime will be discussed, and posing as a fellow inmate in order to obtain a confession (*Rhode Island v. Innis*, 1980; *Colorado v. Spring*, 1987; *Illinois v. Perkins*, 1990). Similarly, lower courts have found it permissible for the officers to suggest to the suspects that telling the truth would be to his or her benefit. However, any explicit statements that telling the truth would aid in the suspect's defense or cause his or her

sentence to be reduced were prohibited. The confession in *State v. Jackson* (1983) was ruled admissible even though the police misled the defendant into thinking there was physical evidence of his presence at the scene of the crime. In *People v. Higgins* (1993), however, the confession was ruled inadmissible because the police directly lied to the defendant about physical evidence at the scene of the crime.

The *Miranda* warning is not required every time police question an individual. It is only necessary to give the warning if the suspect is being questioned in police custody with the intent purpose of obtaining a confession (Grisso, 1998). Police often ask questions in the street, at the suspect's home, or on the way to the police station. A confession may be obtained in each of these cases, but such situations do not necessarily require formal *Miranda* warnings. If a suspect spontaneously confesses before entering police custody, the confession may be admissible if the court finds that the confession was in no way elicited by the police (*Colorado v. Connelly*, 1986). A confession given by a suspect voluntarily in police custody may also be admissible without a formal waiver of the suspect's rights (Oberlander, 1998).

The courts have evaluated the need for a reading of the *Miranda* warning using the *reasonable person* standard. Because a reading of the warning is required if the person is questioned in police custody, this standard evaluates whether a reasonable person would know he/she was in police custody in the given circumstances. Factors relevant to the *reasonable person* standard were described in *U.S. v. Streifel* (1986) and include the location of questioning (a neutral setting or the police station), the restrictions placed on the suspect, the number of police officers present, the length of questioning, and whether the suspect was free to end the interview and leave. Other factors come

from case law and include the time spent in a holding cell, the condition of the cell, and any police behavior that might be an attempt to instill fear in the suspect (*State v. White*, 1973; *West v. U.S.*, 1968).

## 1.2 The Juvenile Court

Most juvenile courts were formed between 1899 and 1925 (Grisso, 1981). The decision to form a separate court system for juveniles was the result of a number of changing ideas in Western society. Previously, people of all ages had been viewed as more or less the same, and children over the age of seven were thought to know the difference between right and wrong. In the late 19<sup>th</sup> and early 20<sup>th</sup> century, childhood came to be viewed as a developmental process in which the person slowly becomes more like an adult and is prepared for adulthood (Aries, 1962). G. Stanley Hall's work formalized this view in the late 19<sup>th</sup> century and separated adolescence from childhood as a unique developmental period (Ross, 1974).

Society's response to the deviant behavior of children also changed during that time period. Previously, Puritan beliefs had dominated society, viewing deviant behavior as the result of a child's sinful nature. From that viewpoint, the appropriate responses to such behavior were harsh punishment and strict moral education. Around the time the juvenile courts were formed, these ideas were replaced by a "deterministic positivism" view of crime in which the child's actions were seen as a consequence of his or her inadequate environment (e.g., poverty, poor child-rearing, other social problems). This new way of understanding criminal actions led to different responses to deviant behavior. Rehabilitation and social reform efforts were natural outgrowths of this new understanding of deviance at both the adult and juvenile levels (Grisso, 1981).

The third modern idea to influence the development of the juvenile courts was borrowed from medieval English law. *Parens patriae* was originally a concept that allowed the feudal landowner to intervene in the raising of a child if the parents were somehow threatening the economic value of that child by not raising him or her properly. In the 19<sup>th</sup> century, the courts used this idea as justification for separating parents and children, if it was in the best interests of the child and the state. Children were placed in institutions and reformatories that were created under the new, “humanitarian” ideas (Grisso, 1981).

This view of the child as an individual in a unique developmental stage, whose actions result from social and environmental factors and who needs the protection and guidance of the state, led naturally to the development of a separate legal system with a unique philosophy. The new juvenile court system was less concerned with the crime itself than with the problematic factors at work in the child’s life; thus, the system sought to provide treatment in an effort to change the child’s circumstances to put him or her on a path toward a productive adulthood. This judicial model was a radical departure from the previous adversarial system in which juveniles were treated as adults and received similar sentences. In the new court system, juvenile crime was seen as a civil matter, not a criminal one. The courts took a parental stance, attempting to provide for the needs of the child. Under this new civil, parental stance, due process protections were removed. Defense attorneys and formal hearings were viewed as unnecessary in a system that looked to nurture the development of the child (Grisso, 1981).

In exchange for a focus on rehabilitation, the juvenile court had forgone all due process rights afforded adults in the criminal system (Grisso, 1981). It was this trade-off

that the Supreme Court examined and declared unconstitutional in the mid 1960s. In *Kent v. United States* (1966), the U.S. Supreme Court ruled that juvenile transfer hearings must meet the standards of due process and fair treatment, if juveniles were to be transferred to adult court. Although this case established that the Fourteenth Amendment did apply to juveniles, the ruling was limited to a specific and, at the time, infrequent type of hearing (Grisso, 1981). The more influential ruling came in response to *In re Gault* (1967), in which the U.S. Supreme Court declared that juveniles were entitled to the same due process protections as adults in all court proceedings. In his majority opinion, Justice Fortas noted that juveniles were entitled to more than a “kangaroo court,” (*In re Gault*, 1967, p.1444) and “neither the Fourteenth Amendment nor the Bill of Rights is for adults alone” (p.1436). In the case of *Gault*, the juvenile had not been informed of his right against self-incrimination nor his right to counsel at different stages of the legal process. The Court ruled his confession inadmissible for these reasons and set the stage for subsequent cases (e.g., *West v. United States*, 1968; *Commonwealth v. McNeil*, 1987; *Commonwealth v. Guyton*, 1989) in which further procedural protections were established.

The *In re Gault* ruling had a substantial impact on the juvenile court system. The ruling was a radical departure from the 60-year tradition of the juvenile court (Feld, 1987); due process protections were seen as antithetical to the previously held philosophy of rehabilitation by many in the system. The rulings in both *Gault* and *Kent*, however, held that due process protections would not get in the way of the courts’ provisions of treatment and rehabilitation. The underlying view in both cases was that the juvenile court system had failed to meet its aim of providing treatment and was, instead, giving

punishments in the form of confinement to training schools and other programs. Because juvenile hearings could lead to confinement, the Court ruled that juveniles “in adjudicatory hearings have a valid claim to adequate notice, to legal counsel, to the privilege against self-incrimination, and to confront and cross-examine opposing witnesses,” (Grisso, 1981, p.5). In its ruling on *Gault*, the Court clearly noted that it did not intend to end the separate juvenile system or to pattern all proceedings after adult criminal proceedings. Rather, the juvenile court was to continue operating under the best interests of the child, recognizing the unique needs of individuals in this formative stage. When all it could provide was confinement, however, the court must be limited by due process rights and its formal protections (Grisso, 1981).

### **1.2.1 *Miranda* and the Juvenile Court**

The *Miranda* rights and warnings were established one year prior to the *Gault* ruling. When due process rights were extended to juvenile court by the *Gault* and *Kent* rulings, *Miranda* became an issue for juveniles, as well (Oberlander & Goldstein, 2001). Cases soon came before the courts questioning juveniles’ abilities to comprehend and waive their rights in ways that met *Miranda*’s knowing, intelligent and voluntary requirements. In *People v. Lara* (1967), the California Supreme Court decided that juvenile status alone did not invalidate a waiver of rights. The court acknowledged that juveniles might not be able to fully comprehend their rights in ways that allow them to legitimately provide waivers, and that an individual youth’s ability must be decided in light of the “totality of circumstances” present in the case. This ruling followed the historic philosophy of the court that the needs and circumstances of each child should be individually considered. It did not specify any age or single factor that would serve as a

cut-off for determining the admissibility of a waiver. The vagueness of the ruling made it difficult for police officers to know if a confession might later be deemed inadmissible, and judges had little guidance about what circumstances to consider (Grisso, 1981).

A federal appellate court attempted to further define the “totality of circumstances” test in *West v. United States* (1968). The ruling followed in the tradition of *Lara* and did not specify cut-offs requirements or specific combinations of factors that would suggest a waiver was invalid. Instead the *West* ruling gave juvenile court judges a list of factors to consider. These nine factors included consideration of the characteristics of a juvenile suspect (e.g., age, education, intelligence) and the circumstances surrounding the interrogation (e.g., the availability of council to the juvenile, be it a relative or attorney) (Grisso, 1981). In 1979, the U.S. Supreme Court officially extended the “totality of circumstances” test to juveniles in *Fare v. Michael C.* Although none of these rulings invalidated a juvenile’s ability to waive his or her rights, each acknowledged the juvenile’s greater risk for deficits that might invalidate a waiver (Grisso, 1998).

Interpreting a juvenile’s ability to waive his or her *Miranda* rights and applying due process to the juvenile system have continued to be challenges. Although the Court has upheld the application of *Miranda* rights to juveniles, the right to a trial by jury was denied in *McKeiver v. Pennsylvania* (1971). The U.S. Supreme Court held that the non-adversarial nature of the juvenile system was an asset and should not be changed. The juvenile court has attempted to balance juveniles’ rights with the basic philosophy of the court, to provide treatment and rehabilitations in a less formal setting. Questions, such as when to inform juveniles of their rights and how to apply due process in a way that is

sensitive to the unique needs of children, remain. The special vulnerability of children was noted in the *Gault* ruling, and the Court recognized that procedures different from those seen in adult criminal court might be required to protect juveniles' rights. At the same time, the assumption was made that juveniles would be less vulnerable than before *Gault* because youth would now be informed of their rights. What *Gault* did not consider was the possible limitations in juveniles' abilities to understand and invoke the rights to silence and legal counsel (Grisso, 1981).

### 1.2.2 Protections Afforded Juveniles

The U.S. Supreme Court acknowledged the vulnerable position of juvenile suspects in its 1962 ruling, *Gallegos v. Colorado*. The Court suggested that the presence of a lawyer or adult relative could put the child "on a less unequal footing with his interrogators" (p.1213). In response, many jurisdictions added the protection of an *interested adult* to the interrogation of minors (Grisso, 1998). Police officers were to give the juvenile an opportunity to consult with a lawyer, parent, or guardian before waiving *Miranda* rights. Over time, the parties who could serve as an *interested adult* and the required content of the meeting were defined by the courts (*Commonwealth v. McNeil*, 1987; *Commonwealth v. Guyton*, 1989). The level of privacy afforded for such consultations continues to vary widely, as does the age specifications of the *interested adult* rule (i.e., generally applies to suspects between 14 and 16 years of age) (Oberlander & Goldstein, 2001).

Research has shown that the presence of an interested adult has not resulted in more juveniles refusing to waive their *Miranda* rights (Grisso, 1981; Grisso & Ring, 1979). In interrogation situations parents often encourage children to be truthful and do



as the police ask. Empirical evidence revealed that parents believed children should cooperate with the police and be responsible for their actions (Grisso, 1981; Grisso & Ring, 1979). In 70% of consultations, parents offered no advice to youth about waiving *Miranda* rights, and 66% of parents did not say a word to their children (Grisso & Ring, 1979). If two-thirds of *interested adults* are not even speaking with the juvenile during the consultation process, this consultation may not be having the protective effect that was intended. It seems that, for the most part, juveniles do not receive additional protection from the interested adults when deciding whether to waive their rights during interrogations.

In addition to the *interested adult* protection, youth are also protected by the “totality of circumstances” test. Grisso (1981) examined the guidelines used by courts to evaluate a juvenile’s understanding of *Miranda* and found that, although courts consistently noted the “totality of circumstances” and cited no cut-offs or thresholds for comprehension, patterns could be seen in their rulings. In a review of all appellate cases between 1948 and 1978, age and IQ were the most commonly cited reasons for declaring waivers invalid in the 40 cases found that addressed this question. Courts seemed to consider observable or easily measured factors, such as age, IQ, literacy, previous contact with police, and factual details of the procedures used by the police to detain and question juveniles (Grisso, 1981).

In their considerations and decisions based on these factors, courts have not reported which factors were given more or less weight. Thus, although it is impossible to tell which factors were seen by courts as most important, the factors noted by the courts can be reviewed. In Grisso’s (1981) review, judges tended to rule that juveniles over 16

years of age had adequate understanding of their rights, and those under age 12 did not. Rulings on juveniles ages 13 through 15 were mixed. In about half of all the cases reviewed, IQ scores were presented as evidence. Although the courts have consistently refused to acknowledge any specific score that invalidates a waiver, most decisions of inadequate understanding involved juveniles with IQ scores below 75 (Grisso, 1981). Prior experience with the police and courts was a commonly noted factor in the appellate cases, and the U.S. Supreme court, in *Fare v. Michael C.* (1979) and *Yarborough v. Alvarado* (2004), established it as a factor in the *totality if circumstances* by noting the role of inexperience. A reading level of 5<sup>th</sup> grade or higher was often used to indicate adequate ability to understand one's rights, whereas a history of special education placement was viewed as an indication that the juvenile might not understand his or her rights (Grisso, 1981).

### **1.3 Empirical Research on Juveniles' Comprehension of Rights**

Reviews of case rulings revealed the key factors used by judges to rule on juveniles' abilities to comprehend and waive *Miranda* rights. Research that has been conducted on juveniles' comprehension of *Miranda* rights and factors that may impact juveniles' decision making during interrogations has supported some of the conclusions drawn by judges. However, findings also raise concerns that juveniles' abilities may be somewhat overestimated by courts.

IQ and age are often cited as factors considered within the "totality of circumstances," and both have been found, empirically, to be significantly related to comprehension of *Miranda* rights (Grisso, 1981; Goldstein et al., 2003). As age and IQ increase, juveniles, typically, are better able to define each right and the key words used

in the *Miranda* warnings. The effect of age seems to plateau at age 14; for those juveniles age 15 and 16, the interaction between age and IQ is a much stronger predictor of *Miranda* comprehension. Understanding of youth over the age of 16 seems to parallel that of adults (Grisso 1981).

In Grisso's (1981) sample of juvenile offenders, those under age 15, and those ages 15 and 16 with IQs below 80, failed to meet the standard of comprehension that a panel of judges and lawyers determined adequate. Although 15 and 16 year olds with average intelligence understood their rights as well as 17 through 22 year olds of equal intelligence, one-third to one-half of this group still did not exhibit adequate understanding (Grisso, 1981). These findings highlight the importance of considering both the juvenile's age and IQ in evaluating his or her comprehension of *Miranda*.

Although the average IQ score in the general population is 100 (The Psychological Corporation, 1991), a study of 4,951 juvenile offenders found an average IQ score of 81.2 for boys and 78.2 for girls (Goldstein, Strachan, & Weil, 2006). If intelligence is not carefully considered, the ability of the "average" juvenile offender to comprehend and apply *Miranda* rights may be overestimated. In a review of all federal appellate cases between 1948 and 1978, 40 cases were found that examined the question of juveniles' comprehension of the *Miranda* warning . In about half of these cases, IQ scores were entered into evidence. The youth's understanding of the *Miranda* warning was considered inadequate in almost all cases where the youth's IQ was below 75 (Grisso, 1981). The level of intellectual ability needed to adequately comprehend the *Miranda* warning may be underestimated by the courts. Research has shown that even

those youth who scored between 80 and 100 on IQ measures only exhibited full understanding of their rights 50% of the time (Grisso, 1981).

Some research has also been done on the effects of previous experience with the police and judicial system on comprehension of *Miranda* rights. Although previous experience with the police has been cited by both the U.S. Supreme Court (*Fare v. Michael C.*, 1979; *Yarborough v. Alvarado*, 2004) and the courts in several jurisdictions (e.g. *State v. Prater*, 1970; *People v. Jenkins*, 2004; *Smith v. Mullin*, 2004; *A.M. v. Butler*, 2004) as evidence of better understanding of the *Miranda* warning, the research does not support this assumption. Grisso (1981) examined juveniles' *Miranda* comprehension scores, as well as their number of prior arrests, felony charges, misdemeanor charges, status offenses, and times they were held in detention facilities. No differences were found between juveniles with more or less experience with the system. Although these juveniles may have heard the *Miranda* warning more times, they did not exhibit greater comprehension. It is relevant to note that when other demographic variables were included in the analysis, ethnicity was a significant moderator of the relationship between previous experience and *Miranda* comprehension. White juvenile offenders' scores on one measure of *Miranda* comprehension increased as the number of felony referrals increased. Black juvenile offenders' scores on the same measure decreased as the number of felony referrals increased. This difference is not fully understood but seems primarily limited to juveniles with a combination of subaverage intelligence and low socioeconomic status.

Research has also shown that simplified versions of the warning do not improve comprehension (Ferguson & Douglas, 1970), nor does legal education about rights (Wall

& Furlong, 1985). After learning about the *Miranda* warning as part of a legal education curriculum, most students refused to waive their *Miranda* rights (81%) and could correctly answer true-false questions about the warning. Students comprehension of important *Miranda* vocabulary, and the role of the right to silence, however, was inadequate even after education. Research on the impact of education provides further evidence that exposure to the *Miranda* warning does not necessarily result in improved comprehension.

In Grisso's (1981) study of 431 juvenile offenders between the ages of 10 and 16, more than half demonstrated inadequate understanding of at least one prong of the *Miranda* warning. Only 20% of the sample displayed adequate understanding of all four prongs. Two-thirds of the sample showed inadequate understanding of at least one of the key vocabulary words used in the warning, with 60% of the sample lacking adequate understanding of the word "interrogation." These findings raise serious concerns about how well juveniles comprehend their rights. The concept of interrogation is central to the idea of *Miranda* rights; if a juvenile does not understand what an interrogation is, he/she may be unable to apply the rights to his/her own interrogation. As would be expected, research has shown that adolescents who comprehend their rights are more like to assert them in an interrogation (Abramovitch, Higgins-Biss, & Biss, 1993).

## 2 THE CURRENT STUDY

Between the 1970s and 2000, little research was conducted on juvenile offenders' comprehension of *Miranda* rights. The work that has been conducted utilizes the instrument Grisso developed and tested in his 1970s research, later published in 1998 as "Instruments for Assessing Understanding and Appreciation of *Miranda* Rights." This

tool includes several instruments that assess an individual's comprehension of the warning, the important words that make up the warning, the nature of interrogation, the right to silence, and the right to legal counsel (see Methods section for a detailed description of the instruments). In addition to its use in research, the instrument has been used to help evaluate the validity of *Miranda* waivers in court proceedings and is commonly cited in testimony (e.g., *People v. Cole*, 2005; *State v. Griffin*, 2005; *People v. Jenkins*, 2004; *Com v. Woods*, 2004; *Smith v. Mullin*, 2004; *Martin v. State*, 2004; *T.S.D. v. State*, 1999; *Carter v. State*, 1999; *State v. Caldwell*, 1992; *People v. Phillips*, 1992; *Matter of Welfare of L.R.B.*, 1985). Although a valuable assessment tool, the admissibility of the instruments has been questioned in some cases because of outdated *Miranda* vocabulary and lack of extensive publication by researchers other than the instruments' author (*People v. Cole*, 2005; *State v. Griffin*, 2005; *Carter v. State*, 1997). On rare occasions, data from the instruments have been excluded from testimony because the norms for the measures were gathered in the 1970s, and courts assumed that general knowledge of and exposure to the *Miranda* warning changed since that time (e.g., *T.S.D. v. State*, 1999).

Exposure to *Miranda* has increased over the years. As the Supreme Court noted in its 2000 *Dickerson* ruling, "the [*Miranda*] warnings have become part of our national culture" (p.14). The warning can be heard many times each day on television shows that depict police investigations and court proceedings. In 1978, the primetime television line-up on the three major networks included five crime- or police-based shows (e.g., *Chips*, *Starsky & Hutch*), and three shows about private investigators (e.g., *Charlie's Angels*, *The Rockford Files*) ("Prime Time Schedule, 1978-1979," n.d.). In 2005, the

same three networks have twelve shows on during primetime that detail criminal investigations and prosecutions (e.g., *Law & Order*, *Crime Scene Investigation*) (“ABC 2005-06,” n.d.; “CBS 2005-06,” n.d.; “NBC 2005-06,” n.d.). The number of primetime television shows exploring legal issues has increased since the 1970s, and such shows often include readings of the *Miranda* warning when suspects are arrested. In addition to these primetime shows, there are many re-runs of shows, such as *Law & Order*, and movies depicting criminal investigations shown on cable channels each day. Current shows also have shifted from a focus on police officer characters (e.g., *Starsky & Hutch*), to a focus on the legal process and aspects of criminal behavior and law (e.g., *Law & Order*).

The increased presence of *Miranda* and other legal issues on television has increased the general population’s exposure to legal ideas. Juvenile suspects are likely to have been highly exposed to these ideas through television. Television watching is known to be negatively correlated with parental income and number of parents in the home, and positively correlated with non-white ethnicity (Gorely, Marshall & Biddle, 2004). These same factors have been found to put juveniles at risk for delinquency and arrest (Wasserman et. al, 2003; Hawkins et. al, 1998; Lipsey & Derzon, 1998; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikstrom 2002; Krisberg & Wolf, 2005).

Given the increased presence of the *Miranda* warning on television, it can be assumed that today’s juveniles, particularly youth at risk for contact with police, have more exposure to the *Miranda* warning than did their youthful counterparts in the 1970s. As noted previously, increased exposure to the *Miranda* warning and police practices are

viewed by the courts as evidence that youth should understand rights and be better prepared to make informed waiver decisions. Although Grisso's (1981) research showed that more contact with the police was not directly associated with better comprehension of *Miranda* rights, court opinions have repeatedly cited experience hearing one's rights read during interrogations as evidence of *Miranda* comprehension (*People v. Jenkins*, 2004; *Smith v. Mullin*, 2004; *A.M. v. Butler*, 2004). Despite these court decisions and the increased presence of *Miranda* in U.S. culture, an empirical question remains. Do today's juveniles comprehend their rights better than did juveniles in the late 1970s?

### **2.1 Development of Legal Understanding**

Findings from research on both the brain physiology of adolescents and the learning of legal concepts suggests that increased cultural exposure to the *Miranda* warning should not cause juveniles today to comprehend their rights better than did their counterparts in the 1970s. In sum, studies have found that the superior frontal regions of the brain, known to control executive cognitive functioning, mature and grow during adolescence. Growth in this area is thought to be the cause of the improved frontal lobe functioning seen in later adolescence and early adulthood (Sowell, Thompson, Tessner, & Toga, 2001). These findings highlight the important point that, although cultural exposure to *Miranda* may change over time, certain developmental processes that may be required to comprehend and make informed decisions about complex legal issues may not be affected by these cultural shifts.

The existing literature on the development of legal reasoning is, for the most part, theoretical. Legal Development Theory (Tapp & Kohlberg, 1977), closely related to Kohlberg's theory of moral development, suggests that the individual must experience



both a quantitative change in his or her amount of knowledge on a subject *and* a qualitative change in how he or she interprets, values, and understands this information (Levine & Tapp, 1977). Although exposure to the *Miranda* warning via television and other forms of media might increase a juvenile's quantitative knowledge of the warning, it should not provide the qualitative change required to develop a deeper understanding of the complex ideas involved. Such a qualitative change requires a conflict in which new information does not fit with the individual's currently held ideas (Lee et al., 2003; Festinger, 1957; Berlyne, 1960). This internal conflict motivates the person to develop a new understanding that can incorporate the new information, a process Piaget referred to as "equilibration" (Flavell, 1977). This conceptual change is not the accumulation of facts required for quantitative knowledge; rather, it is a "revolutionary" process in which the old paradigm is abandoned for a new understanding (Strike & Posner, 1992). Studies of how to bring about conceptual change in students have proposed that new ideas must be convincingly presented if they are to bring about the desired change. Students must be convinced that the new conceptual understanding is better than the old one (Posner, Strike, Hewson & Gertzog, 1982).

The revolutionary process required to change juveniles' understanding of the *Miranda* warning is not likely to be started by hearing a warning quickly read on a television program or through other passive exposure to the warning in the media. In fact, a substantial body of research has shown that individuals have incredible belief perseverance; that is, they will continue to hold on to a previously held idea despite extensive new evidence to the contrary (Lau, Lepper & Ross, 1976, as cited by Ross, Lepper, Strack & Steinmetz, 1977). Although research in this area has focused on the

physical sciences, it also applies to how individuals understand legal concepts.

Individuals exposed to demonstrations and even to entire classes that suggest a different understanding of a phenomenon show little to no change in their understanding of that event (e.g., Champagne, Gunstone, & Klopfer, 1985; diSessa, 1982).

Even if incorrect, individuals' conceptions about the world often have strong explanatory power, appear to have evidentiary support, and are supported by an individual's fundamental understanding of the world (Chinn & Brewer, 1993; Zirbel, 2004). For example, a juvenile might possess the understanding that a person must obey the police. This belief would explain why most citizens obey the police (e.g., following traffic regulations and other laws), would be supported by evidence found in daily interactions (e.g., people on the street and the television obeying the police), and would be in concordance with the juvenile's fundamental understanding of authority and how the world operates. If the same juvenile were to hear a quick, rote reading of the *Miranda* warning on television, it would include, "you have the right to remain silent." It is unlikely that hearing this information, even repeatedly, would change the juvenile's belief that he/she must follow police orders, including police pressure to discuss a crime or incriminate oneself. Passively hearing such information on television or from other media sources would not start the "revolutionary" process in which an old idea is abandoned for a new understanding that better accounts for the observed facts.

Although evidence suggests that an accurate comprehension of the *Miranda* warning may be related to several developmental processes, the courts have cited the increased cultural exposure to the *Miranda* warning as evidence that juveniles' comprehension has improved. Under this assumption, juvenile *Miranda* comprehension

norms established by Grisso's (1981) 1970s study have been challenged in some courts. The current study compared the understanding exhibited by juvenile justice youth in the late 1970s to those interviewed more than twenty years later, at the beginning of the 21<sup>st</sup> century. Acquiring an understanding of complex legal issues, such as rights, is, likely, a complicated developmental process. Thus, juveniles' comprehension of *Miranda* rights should remain fairly consistent over time, despite increased cultural exposure from the 1970s to the 21<sup>st</sup> century.

## **2.2 Hypotheses**

### **2.2.1 Primary research question**

Although exposure to the *Miranda* warning has increased over time and become part of U.S culture, the comprehension exhibited by juveniles today will not differ significantly from the comprehension exhibited by juveniles assessed in the late 1970s. Both groups will score similarly on all four measures included in both the *Instruments for Assessing Understanding and Appreciation of Miranda Rights* and the *Miranda Rights Comprehension Instruments II*.

### **2.2.2 Preliminary Hypotheses**

In the 21<sup>st</sup> century sample:

1. There will be no significant differences between the participants gathered from the three testing centers.
  - a. Participants from the three testing centers will not differ on *Miranda* comprehension (*CMR-II*, *CMR-R-II*, *CMV-II*, and *FRI* scores), intelligence (VIQ scores), or key demographic variables (ethnicity, history of

placement in special education, number of arrests, and number of DHS commitments).

- i. It is expected that there may be a significant difference between testing centers on the key demographic variable of age. The second Philadelphia area center was only used during the last year of collecting data. At that point, most of the older subjects needed for the study had already been gathered. For this reason, it is expected that the average age at the second Philadelphia area testing center may be younger than at the other centers used in the study.
2. There will be no significant gender differences in *Miranda* comprehension.
  - a. There will be no significant differences in the scores obtained by girls and boys on the *CMR-II*, *CMR-R-II*, *CMV-II* and *FRI*.
3. The average age, IQ, and offense history of the 21<sup>st</sup> Century sample will not differ significantly from the average age, IQ, and offense history of the 1970s sample.
4. *Miranda* comprehension scores obtained from the *Instruments for Assessing Understanding and Appreciation of Miranda Rights* and scores obtained from the *Miranda Rights Comprehension Instruments-II* will be comparable.
  - a. In the sub-sample of youth tested with both the original and updated instruments, there will be no significant differences in the scores juveniles obtain on the *CMR* and *CMR-II*, the *CMR-R* and *CMR-R-II*, the *CMV* and *CMV-II*.

### 2.2.3 Primary Hypotheses: Quantitative

1. The comprehension scores of juveniles from the 21<sup>st</sup> century sample will not differ significantly from the scores of juveniles from the 1970s.
  - a. The two groups will score similarly on the *CMR* and *CMR-II*, the *CMR-R* and *CMR-R-II*, the *CMV* and *CMV-II*, and the *FRI*.
  - b. The proportion of youth in the 21<sup>st</sup> century sample exhibiting adequate, questionable, and inadequate understanding of the four prongs of the *Miranda* warning in the *CMR-II* will be similar to the proportion of youth in the 1970s study who exhibited adequate, questionable, and inadequate understanding of the warning in the *CMR*. The same relationship will be seen with the *CMR-R-II* and *CMR-R* and the *CMV-II* and *CMV*.
2. The same key variables will be strongly correlated with *Miranda* comprehension in both the 1970s and 21<sup>st</sup> century samples.
  - a. As Grisso found in the 1970s sample, IQ and age will be the variables most strongly associated with *Miranda* rights comprehension in the new sample.
3. The relationship between age, IQ, and *CMR-II* scores in the 21<sup>st</sup> century sample will be similar to the relationship found between age, IQ, and *CMR* scores in the 1970s sample.
  - a. As seen with scores on the *CMR* in the 1970s sample, age and IQ will be significantly related to *CMR-II* scores. When scores on the *CMR-II* are examined by age, 13, 14, and 15 year olds will score significantly lower than 17, 18, and 19 year olds. Scores of 16 year olds will not differ significantly from the scores of either of the two age groups. There will

be no significant differences between the scores of 16, 17, 18, and 19 year olds on the *CMR-II*.

- b. As seen with scores on the *CMV* in the 1970s sample, when scores on the *CMV-II* are examined by IQ classification and age, 13 and 14 year olds will score significantly lower than ages 15 and above. The scores of 15 and 16 year olds will not differ significantly from the scores of 17, 18, and 19 year olds.
4. Just as in the 1970s sample, there will be no simple relationship between previous experience with the police and *Miranda* comprehension.
    - a. In the 21<sup>st</sup> century sample there will be no significant relationship between number of arrests and scores on the *CMV-II* and *CMR-II* or between number of DHS commitments and scores on the *CMV-II* and *CMR-II* when ethnicity is not included in the analysis. Ethnicity will be examined as a potential moderator of the relationship between experience and scores on the *CMV-II* and *CMR-II*.

Previous research has indicated that ethnicity may moderate the relationship between experience and *Miranda* comprehension. In the 1970s study, Grisso (1981) found that *CMR* scores decreased as experience increased for African-Americans, but that *CMR* scores increased as experience increased for white participants. No such relationship was seen between experience and *CMV* scores. Preliminary analyses on the Massachusetts portion of the 21<sup>st</sup> century sample indicate that *Miranda* comprehension of Latino youth decreased as the number of police detentions in which the warning was read (as reported by the youth) increased (Goldstein et al., 2003). No such relationship

was seen for African-American youth. Because the results of previous research vary, no specific relationship between ethnicity, experience, and *Miranda* comprehension is hypothesized. The relationship between youth of different ethnic groups and the police can vary over time and by community. It may be influenced by the ethnic make-up of both the community and the police force, as well as the socioeconomic status of the community. For these reasons, it is possible that the relationship between ethnicity, experience, and *Miranda* comprehension may change over time.

#### **2.2.4 Primary Hypotheses: Descriptive**

1. When youth in the two samples misunderstand aspects of the *Miranda* warning, they will make similar types of errors.
  - a. The mistakes made by youth from the 21<sup>st</sup> century sample on the *CMR-II* will be similar to the misunderstandings exhibited by youth in the 1970s sample on the *CMR*.
    - i. The first prong of the *Miranda* warning (right to silence) will be misinterpreted most often as a statement that one must be silent.
    - ii. When the second prong of the *Miranda* warning (statements will be used in court) is misunderstood, it will be interpreted most often to mean that any lying or disobedience can result in negative consequences in court. It will not include the aspect that truthful statements that may be self-incriminating can also be used against the defendant in court.
    - iii. When the third prong of the *Miranda* warning (right to an attorney before and during interrogations) is misunderstood, the time and

place an attorney can be obtained will be unclear or unspecified (even after query from the examiner).

- b. The errors in defining key vocabulary words made by youth from the 21<sup>st</sup> century sample (on the *CMV-II*) will be similar to the errors made by their counterparts in the 1970s (on the *CMV*).
  - i. “Interrogation” will most often be defined as a court hearing, or the youth will be unable to give any definition.
  - ii. “Consult” will most often be defined as talking to someone. The purpose of seeking advice will not be included in the definition.
  - iii. “Right” will most often be defined as something one can do. Even after prompting from the examiner, the definition will not include the notion that a right is protected.
- c. As in the 1970s sample, juveniles in the 21<sup>st</sup> century sample will commonly misinterpret Warning III on the *CMR-R-II*, believing that a social worker is synonymous with an attorney.
- d. Juveniles in the 21<sup>st</sup> century sample will make errors similar to those of juveniles in the 1970s in their understanding of the function of rights (on the *FRI*).
  - i. The most common misconceptions about the reasons lawyers seek the truth (item 9 on the Right to Counsel subscale) will include: that the lawyer must report all information to the court (most common), that the lawyer would not advocate for a guilty juvenile,



and that the lawyer is similar to a judge and will decide guilt and/or punishment.

- ii. A majority of youth will believe that a suspect must talk about an alleged offense if ordered to by the judge (item 15 on the Right to Silence subscale).

### **3 METHODS**

In order to compare juveniles' comprehension of their *Miranda* Rights in the 1970s to that of juveniles today, two sets of data were compared. The first data were from Grisso's original study (1981). The data from that study, gathered in the 1970s, no longer exist; both the raw data and the punch cards used to analyze them deteriorated to the point at which they became unusable. Therefore, published results and analyses of Grisso's data were compared with results from the 21<sup>st</sup> century sample. The participants in, measures for, and procedures used in each data set's collection are described below.

#### **3.1 Grisso's 1970s Study**

##### **3.1.1 Participants**

A total of 485 youth participated in the study. Three hundred fifty-nine juveniles between ten and 16 years of age were tested in a court detention center, representing nearly the entire population<sup>1</sup> of juveniles in the center during the 11-month period in which data were collected, provided they met the following requirements: (1) remained in the center for 24 hours, (2) were not charged with a felony, (3) were not excluded because of emotional state at the time of testing, and (4) volunteered to participate in the study. Another 72 juveniles were tested in boys town and boys school facilities. The additional juveniles were tested to increase the sample size of certain age and racial

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<sup>1</sup> An exact percentage is not given.

groups. Participants' ages ranged from 10 to 16 years ( $M = 14.6$ ,  $SD = 1.2$ ). The sample was 59.4% male, 40.6% female. The ethnicity breakdown was 73.3% Caucasian and 26.7% Black or African-American. To check whether the sample collected was representative of the detention center population, demographic information was collected from all juveniles at the center for the first three months of the 11-month testing period. The demographic information of all juveniles over the 3-month period was compared with the sample of 431 juveniles (359 from the court detention center and 72 from the boys town and boys school facilities) between the ages of 10 and 16. Some differences in offense history were observed, but no significant differences were found between the groups on offense history or on any other demographic characteristics. Thus, Grisso concluded that the group of juveniles tested was representative of the detention center population (1981).

In addition to the 431 juveniles 10 through 16 years of age, data were also collected from 54 youth ages 17 through 19. Half of these participants were tested as part of the adult offender sample, and the other half were tested as part of the adult non-offender sample gathered by Grisso (1981) at the same time. The offender and non-offender samples were combined for most analyses because few if any differences were seen between the groups. The offender sample's previous experience with the law did not improve *Miranda* comprehension.

The offender portion of the sample was made up of 27 male and female volunteers residing in four St. Louis area halfway houses who were on either probation or parole. The 27 non-offender participants were volunteers obtained in a variety of settings (e.g., custodial services, maintenance workers at a university and in a hospital).

### 3.1.2 Measures

#### *Instruments for Assessing Understanding and Appreciation of Miranda Rights.*

Comprehension of *Miranda* Rights was assessed using Grisso's *Instruments for Assessing Understanding and Appreciation of Miranda Rights* (1998). The instruments were originally developed for a research project and were later published in 1998. The study was conducted in the St. Louis metropolitan area, and the instruments contain the wording of the *Miranda* warning used in that jurisdiction in the 1970s. The measure consists of the following four instruments:

(1) *Comprehension of Miranda Rights (CMR)*. This instrument was designed to be an objective measure of the examinee's understanding of the standard *Miranda* warning. Each of the four prongs of the *Miranda* warning is read aloud by the examiner, and the examinee is asked to explain the right in his or her own words. Using standardized criteria and inquiries, the examiner rates the explanation as adequate (2 points), questionable (1 point), or inadequate (0 points). Total scores on this measure range from 0 to 8.

(2) *Comprehension of Miranda Rights- True or False (CMR-TF)*. Later referred to as the *Comprehension of Miranda Rights-Recognition (CMR-R)* (in the 1998 publication of the instruments), the *CMR-R* evaluates the individual's comprehension of the four prongs of the *Miranda* warning without requiring verbal expressive abilities. The examiner reads one prong of the warning and then asks the examinee whether another sentence means the same thing as the sentence from the warning. Three sentences are read for each of the four prongs, with scores on the *CMR-R* ranging from 0-12. Correct responses receive 1 point; incorrect responses receive 0 points.

(3) *Comprehension of Miranda Vocabulary (CMV)*. The *CMV* evaluates the examinee's understanding of six key words used in the *Miranda* warning. The examiner reads each word, uses it in a sentence, and then reads the word again. The examinee is asked to give the meaning of the word. Scores on the *CMV* range from 0 to 12, and each response is scored as adequate (2 points), questionable (1 point), or inadequate (0 point).

(4) *Function of Rights in Interrogation (FRI)*. The *FRI* was developed throughout the research project; thus, the final version of the *FRI* was administered only to the last 105 participants in the study. The *FRI* uses hypothetical vignettes to assess the individual's understanding of the function and significance of *Miranda* rights during interrogation and in legal proceedings. The examiner shows the examinee a picture and reads a short vignette to establish the context. The examinee is then asked several questions. A total of 15 questions are asked about the 4 pictures and vignettes. Three areas of understanding are assessed and result in the following subscales: (1) Nature of Interrogation Subscale (NI) (i.e., assesses the examinee's perception of the role of the police and suspect in an interrogation), (2) Right to Counsel Subscale (RC) (i.e., assesses the examinee's perception of the role of an attorney in legal proceedings), and (3) Right to Silence Subscale (RS) (i.e., assesses the examinee's perception of the right to remain silent during different stages of legal proceedings). Each response is scored as adequate (2 points), questionable (1 point), or inadequate (0 points), with total scores ranging from 0 to 30.

Test-retest reliability of the *CMR* was examined by calculating the Pearson  $r$  coefficient ( $r = .84$ ) (Grisso, 1998). Test-retest reliability was not examined for the other

components of the *Instruments for Assessing Understanding and Appreciation of Miranda Rights*.

Inter-rater reliability of Grisso's individual instruments was as follows: (1) *CMR* ( $r = .92$  to  $.96$ , across pairs of scorers), (2) *CMV* ( $r = .97$  to  $.98$ ), (3) *FRI* ( $r = .94$  to  $.96$ ) (Grisso, 1998). Inter-rater reliability of the *CMR-R* was not examined because scoring requires no judgment or interpretation by the examiner.

The construct validity of the instruments was established during Grisso's study; performance on the instruments correlated with factors theoretically related to *Miranda* comprehension, such as general intelligence and age. The warning used in the instrument is taken from the jurisdiction in which the juveniles tested were charged. Thus, the content validity of the instrument is excellent for the sample in the 1970s study. The content validity may be reduced in other jurisdictions that use different versions of the warning.

*Wechsler Intelligence Scale for Children-Revised*.

The *Wechsler Intelligence Scale for Children-Revised (WISC-R; 1974)* is a standardized measure of intelligence (Flanagan & Kaufman, 2004). The Similarities, Vocabulary, and Block Design subtests of the *WISC-R* were administered to participants, and an IQ score was prorated on scores from these subtests (participants between the ages of 17 and 19 were administered the same three subtests from the *Wechsler Adult Intelligence Scale*). The three subtests were chosen because, of any of the *WISC-R* subtests, they consistently showed the highest correlations with Full Scale IQ (Wechsler, 1974) and because an IQ prorated from these three subtests was found to correlate with Full Scale IQ at or above  $.90$  (Wechsler, 1955).

Test re-test (Similarities,  $r=.81$ , Vocabulary,  $r=.82$ , and Block Design,  $r=.81$ ) and interrater reliability have been found repeatedly to be high, and the construct and content validity of the *WISC-R* have been repeatedly established (Wechsler, 1974).

*Review of court records.*

The following information was obtained for each subject from the court's computer storage of juveniles' files: (1) age; (2) sex; (3) race; (4) local address, used to classify socioeconomic group; (5) number of prior arrests for felony charges; (5) number of prior misdemeanor referrals; (7) number of prior referrals for "status offenses"; (8) total number of prior referrals; and (9) number of prior detentions (Grisso, 1981).

### **3.1.3 Procedures**

The procedures for the 1970s study were carefully developed with the help of the St. Louis University Internal Review Board and the St. Louis County Juvenile Court, including the court's judiciary, legal staff, public defender, social service chiefs, and detention center supervisor. Special attention was paid to ethical concerns, specifically to the voluntary nature of participation and confidentiality.

Parental consent to participate in research was obtained for all juveniles in the boys town and boys school samples. Parental consent was not obtained for the sample of juveniles from the detention center. State law did not require parental consent for the testing and interviewing of juveniles in detention. Detained juveniles were temporary wards of the court and consent authority was given to the juvenile court judge and/or to the officer to whom the judge delegated authority. Although research staff originally intended to seek parental consent for youth under the age of 18, several factors, including

the short length of time juveniles remained in the center and the rarity of parental visits, made obtaining parental consent impossible.

Given all of the relevant circumstances, the review boards concluded that detained youth could be approached to volunteer for the research study if: (1) the court, as guardian, gave approval; (2) methods were in place to screen prospective individuals and avoid negative emotional reactions to testing by vulnerable juveniles; (3) testing was completed after the juvenile had been in detention for a minimum of 24 hours; and (4) an adequate plan was in place to obtain informed consent from juveniles and to maintain confidentiality. A social worker was appointed by the court to screen juveniles for participation in the study, and the court approved, in principle, the participation of detained juveniles. Approximately one out of every 12 juveniles did not participate in the study because either the social worker screened out the youth because of unusual emotional behavior or because the youth declined to participate. Informed assent or consent was obtained by a research assistant on the juvenile's detention unit. Each juvenile was interviewed individually by a trained research assistant.

All participants in the offender and non-offender samples of youth ages 17 through 19 were approached by a research assistant at the halfway house (offenders) or their place of employment (non-offenders). Informed consent was obtained from all participants, and each participant met individually with a trained research assistant.

## **3.2 The 21<sup>st</sup> Century Sample**

### **3.2.1 Participants**

Data were collected from 185 juveniles at three facilities, as part of a larger on-going study to develop norms and establish psychometric properties for the *Miranda Rights Comprehension Instruments- II (MRCI-II)*, the revised version of the *Instruments*

*for Assessing Understanding and Appreciation of Miranda Rights.* Data were collected from 57 boys in a residential post-adjudication facility in Massachusetts, 16 participants in a short-term holding facility for youths adjudicated delinquent and awaiting placement in the greater Philadelphia area, and 113 participants in Philadelphia's detention center. Two participants from the Massachusetts testing center were transferred from the facility before completing study procedures and, thus, were removed from the study. A total of 183 youth are included in the 21<sup>st</sup> century study. Ages ranged from 12 to 19; however only one 12 year old youth participated. Although we attempted to include younger youth (ages 10, 11, and 12), we were unable to do so; youth of these ages were rarely placed in the participating facilities. See Table 1 for demographics of the sample. All participants in Pennsylvania were represented by the Philadelphia Defender Association, had no open cases involving confessions at the time of participation, and were not excluded by the Participant Advocates (i.e., a member of the treatment or social work staff at each center who ensures that the youth is emotionally fit to be approached about participating in research and if so, that they youth is appropriately informed of study procedures and appears to understand the nature of participation) at the facilities as unfit to participate at the time.



Table 1

21<sup>st</sup> Century Demographics by Testing Center

		Testing Center			
		MA Center (males only)	PA Center 1	PA Center 2	Total
Gender	Male	$n = 55$	78	7	140
	Female	---	34	9	43
Age		$M = 15.80$ ( $SD = 1.34$ )	16.24 (1.76)	14.69 (1.99)	15.97 (1.71)
Ethnicity	Asian	$n = 3$	0	0	3
	Black or African American	8	67	11	86
	White non-Hispanic	19	10	1	30
	Hispanic or Latino	12	14	3	29
	Other	13	6	1	20
	Unknown	0	15	0	15
	Number of Previous Arrests		$M = 5.35$ ( $SD = 3.95$ )	4.58 (3.30)	2.88 (2.09)
Number of Previous Detentions		$M = 4.22$ ( $SD = 3.00$ )	3.40 (2.71)	1.88 (1.59)	3.50 (2.78)

**3.2.2 Measures***Miranda Rights Comprehension Instruments-II (MRCI-II).*

Comprehension of *Miranda* rights was assessed using the *MRCI-II*, the revised version of the *Instruments of Assessing Understanding and Appreciation of Miranda Rights* (Grisso, 1998). The *MRCI-II* includes a fifth prong of the *Miranda* warning in each relevant instrument, and involves updated *Miranda* language to represent the simplified warnings used in most jurisdictions today. A fifth instrument, *Perceptions of Coercion during the Holding and Interrogation Process (P-CHIP)* was added to assess juveniles' self-reported likelihood of offering false confessions given specific police

interrogation behaviors. This instrument was administered to participants, but resulting data were not included in the current study because no comparable instrument was used in the 1970s research. The following four instruments of the *MRCI-II* were analyzed as part of the current study; the purpose and format of each instrument remains the same as in Grisso's version, but specific changes from the original version are highlighted here.

(1) *Comprehension of Miranda Rights-II (CMR-II)*. The language of each prong of the warning was updated, and the fifth prong was included. Scoring criteria from the *CMR* are used, with scoring for the fifth prong developed using a similar process to that used in the original creation of the instrument, and the new item and scoring criteria were reviewed by a panel of psycho-legal experts. Scores on the *CMR-II* range from 0 to 10.

(2) *Comprehension of Miranda Rights-Recognition-II (CMR-R-II)*. The instrument was updated to include the modern wording of the warning, as well as the fifth prong. The *CMR-R-II* uses the same comparison sentences as the *CMR-R* for the first four prongs of the warning. The comparison sentences for the fifth prong of the warning were created to parallel the sentences used in the *CMR-R*'s four warnings. The new items and scoring criteria were reviewed by a panel of psycho-legal experts. Scoring is identical to that used on the *CMR-R*, with scores on the *CMR-R-II* ranging from 0 to 15.

(3) *Function of Rights in Interrogation (FRI)*. The *FRI* used in the *MRCI-II* is identical to that included in the *Instruments for Assessing Understanding and Appreciation of Miranda Rights*. Two items from the Nature of Interrogation subscale were omitted from the data collected in Massachusetts; because the *P-CHIP* includes questions about how the suspect would be feeling at the time of interrogation, the two questions in the *FRI* asking how the suspect and police might be feeling were viewed as

unnecessary. However, for comparison with the original dataset these two questions were added back into the *FRI* when it was administered to the 21<sup>st</sup> Century participants collected in the Philadelphia area.

(4) *Comprehension of Miranda Vocabulary-II (CMV-II)*. The *CMV-II* includes 18 words, 12 in addition to the original six used in the *CMV*. The additional words were included to extend the utility of the instruments to jurisdictions with alternate wordings of the *Miranda* warning. The scoring of the new items parallels Grisso's original criteria. A panel of experts reviewed the new items and scoring criteria prior to use. Scores on the revised instrument range from 0-36.

Based on preliminary analyses, test-retest reliability for the instruments within the *MRCI-II* is as follows: (1) *CMR-II* ( $r=.61$ ), (2) *CMR-R-II* ( $r=.75$ ), (3) *FRI* ( $r=.58$ ), and (4) *CMV-II* ( $r=.77$ ) (Mesiarik, Goldstein, & Thomson, 2002).

By examining the relationship between *Miranda* comprehension, age, and Verbal IQ, Goldstein and colleagues (2003) established the construct validity of the measure. Using regression analyses, Verbal IQ and age each independently predicted *Miranda* comprehension ( $b_{\text{age}} = .07$ ,  $SE_{\text{age}} = .02$ ,  $p < .01$ ;  $b_{\text{VIQ}} = .01$ ,  $SE_{\text{VIQ}} = .002$ ,  $p < .01$ ) (Goldstein et al., 2003).

The established content validity of the original instruments serves as the basis for the content validity of the *MRCI-II*. Additions and changes to the instrument have followed the format and logic originally used by Grisso. The additions to the instruments and scoring criteria were reviewed by attorneys and psychologists specializing in *Miranda* warnings. The content validity of the measure is further established by the use of situations commonly encountered by youth in interrogation situations (Goldstein et al.,

2003). An independent study to validate the scoring criteria of the *MRCI-II* is currently underway (Goldstein, Mesiarik, Kalbeitzer, & Strachan, in preparation). More than 1,000 attorneys will be asked to score sample responses to items on the *MRCI-II*. The scores given by attorneys will be compared to the scoring criteria listed in the *MRCI-II* manual. *Wechsler Abbreviated Scale of Intelligence (WASI)*.

The WASI is a standardized measure of intellectual functioning (The Psychological Corporation, 1999). The WASI measures both Verbal IQ (VIQ) and Performance IQ (PIQ). The two subscales are known to have a high correlation, and the verbal abilities measured by the VIQ subscale are most relevant to *Miranda* comprehension. For this reason, as well as the need to limit testing time, only the verbal subtests of the WASI are administered to participants. A VIQ score is produced from participants' scores on the Vocabulary (measures expressive vocabulary and verbal knowledge) and Similarities (measures general intellectual ability, as well as abstract reasoning and conceptual verbal understanding) subtests (The Psychological Corporation, 1999).

Inter-rater reliability is excellent for both verbal scales of the WASI (Vocabulary,  $r=.98$ , Similarities,  $r=.99$ ). Test-retest reliability of the WASI Verbal IQ scores is strong, as well ( $r=.92$ ) (The Psychological Corporation, 1999). The content and construct validity of the WASI have been repeatedly established (The Psychological Corporation, 1999).

#### *Demographic questionnaire.*

Each participant was asked a brief set of questions to gather non-identifying demographic information. Information on the participants' general demographic

information (e.g., age, ethnicity, highest grade completed, history of special education), social environment (e.g., number of adults living at home; number of parents living at home; number of relatives, good friends, or associates in juvenile detention or adult jail/prison), legal history (e.g., age at first arrest, number of times arrested, delinquencies that resulted in commitment, most serious arrest, number of previous detentions), and *Miranda* history (e.g., number of times detained by police in which *Miranda* was read, recollection of the *Miranda* warning, recollection of discussing the *Miranda* warning with lawyer, other sources of information about the *Miranda* warning) were collected.

In addition to the measures described in this section, all participants were administered the *Wechsler Individual Achievement Tests (WIAT)* (The Psychological Corporation, 1992). Participants recruited in the Philadelphia area were also administered the *Gudjonsson Suggestibility Scale-II (GSS-II)*. These measures are being used to address separate research questions as part of the larger project, but they were not included in the current study.

### **3.2.3 Procedures**

The procedures used for the 21<sup>st</sup> century sample were designed to follow those established by the 1970s study as closely as possible. In Massachusetts, researchers worked with the Department of Youth Services and the detention facility to develop and implement study procedures. Procedures used in the Philadelphia area paralleled those used in Massachusetts; however, because of differences in state regulations and custodial policies, some recruitment procedures had to be altered. Modified procedures were carefully developed with the help of the Philadelphia Defender Association, the Department of Human Services, the local facilities, and the Drexel University Internal

Review Board. Special attention was given to ensure the protection of juveniles for whom parental consent could not be obtained.

For the 57 boys whose data were collected in Massachusetts, blanket consent was provided by the Massachusetts Department of Youth Services to approach youth in a residential, post-adjudication facility (the state had custody of all delinquent youth placed in residential facilities). Parents of youth younger than 18 years of age were contacted by mail and invited to decline their child's participation by returning a form in a pre-addressed, stamped envelope or by calling the investigator. No parents declined. Before a youth was approached, his participation was cleared by an advocate from the facility (regarding mental health and behavior at the time of intended testing). Assent was obtained from every youth under 18 years of age, and consent was obtained for those youth 18 years of age. No youth declined to participate. Each participant met individually with a trained research assistant to complete all measures.

The remainder of the sample, collected in the Philadelphia area, was recruited using lists of eligible participants provided by the Philadelphia Defender Association. The lists included all youths the Defender Association represented who were housed in the designated detention facilities and did not have open cases that involve confessions. The Defender Association provided the youths' names and ages, as well as their legal guardians' contact information. If a youth was under 18 years of age, five attempts were made to reach the guardian over a 72 hour period. If a guardian was reached and agreed to a youth's participation, consent forms were mailed to the address designated by the guardian.

Of the lists received, approximately 45% of guardians were reached. Once reached, approximately 57% verbally agreed and 8% declined participation. The remaining 36% reported that the youth had already been discharged from the facility. Of the guardians who verbally agreed, approximately 22% returned the consent forms mailed to them. When a consent form was received by research staff, assent was then sought from the youth. If the guardian did not return the consent form, the youth was not approached by research staff. Consent was sought directly from youths listed by the Defender Association who were 18 years of age or older. If the parent of a youth under 18 years of age was unreachable, assent was sought from the youth in the presence of a Participant Advocate. Each participant met individually with a trained research assistant to complete all measures.

### **3.3 The Current Study**

#### **3.3.1 Quantitative Analyses**

The book describing the results of the 1970s study, *Juvenile's Waiver of Rights: Legal and Psychological Competence* (Grisso, 1981) and all related articles were reviewed. All findings from these sources on the juvenile offender and young adult populations were recorded. The data from the 21<sup>st</sup> century sample was analyzed using the same statistics reported in the book to produce comparable results.

Prior to any analysis, the *FRI* scores of participants from Massachusetts were adjusted to correct for the two questions not included in the version of the *FRI* given to those participants. Their scores were adjusted to be out of 30 points, the total number of potential points on the full *FRI*.

### 3.3.2 Descriptive Analyses

Grisso's results were reviewed, and all descriptions of typical misunderstanding of individual *CMR*, *CMR-R*, *CMV*, and *FRI* items were recorded. In order to compare the two samples, 21<sup>st</sup> century questionable or inadequate responses were recorded for each item of these instruments that Grisso provided a description of his 1970s results, . Two independent reviewers (one familiar with Grisso's descriptions of his 1970s results and one blinded to these results) grouped 21<sup>st</sup> century item responses into categories of misunderstanding. The two raters independently produced nearly identical categories, differing only in their labeling of these categories, not in their content (e.g., "negative actions will be told to the court and used against you", versus, "things bad, negative or wrong will get you in trouble and be used in court"). Before finalizing the categorization of 21<sup>st</sup> century responses, the raters met and came to agreement on the most representative descriptive label for each type of error.

### 3.3.3 Limitations of the Comparison

Comparing two separate data sets gathered almost thirty years apart has inherent limitations. It is impossible to replicate, or perfectly control for, the physical, social, educational, and socioeconomic environment of the 1970s participants. Even in the same communities of St. Louis County from which the 1970s sample was gathered, changes in state and local policies, neighborhood schools, and socioeconomic status would affect results in ways that would be difficult to identify and quantify. Given the inherent differences in samples, this study, therefore, could not directly examine how *Miranda* comprehension changed over time. This study did, however, allow us to examine the relationships between relevant youth characteristics and *Miranda* comprehension to determine if the relationships have changed since the 1970s. This study also allowed us



to examine various aspects of *Miranda* comprehension to see if a sample of today's youth demonstrates similar levels of understanding to that observed in the 1970s.

It is important to note that the 21<sup>st</sup> century sample differed from the 1970s sample in a few important ways. The 21<sup>st</sup> century sample was more ethnically diverse and was predominantly composed of youth from urban areas. In the 1970s sample, half of 17 through 19 year old youths were gathered from the community, and half were on probation or parole. Youth ages 17 through 19, in the 21<sup>st</sup> century sample, were gathered at the juvenile justice facilities. Furthermore, transfer policies certainly affected which youth, ages 17 through 19, were placed in juvenile facilities. As such, it is likely that the 21<sup>st</sup> century youth participants committed less serious offenses than did their 1970s counterparts, and, therefore, the older youth in the two samples could differ in important ways. Despite these key differences between samples, examination of study differences in measures and procedures suggests that the two studies are not so different as they may first appear.

Because the court provided consent for the 1970s study, any resident of the detention center who met eligibility criteria was a potential participant and could be approached by research staff. In the 21<sup>st</sup> century study, similar procedures were in place for the data gathered in the Massachusetts center, because the state had legal custody and decision making rights for juvenile offenders. In the Philadelphia area centers, however, the state did not have the legal right to consent to youths' research participation. Consequently, only youth represented and referred by the Philadelphia Defender Association could be approached by research staff after attempting to reach their parent/guardian for permission. Although this may have changed the pool of potential

participants slightly, the Philadelphia Defender Association represents approximately 70% of the youth charged and housed in Philadelphia's detention center (S. Simkins, J.D., personal communication, June 6, 2006). Therefore, the majority of youth in the center were potential participants. The 21<sup>st</sup> century participants from the Philadelphia area were limited by the exclusion of any youths with open cases involving confessions. The 1970s sample was similarly limited by the exclusion of any youths with felony charges.

As part of the 21<sup>st</sup> century study, researchers attempted to obtain consent from the youths' guardians. Call procedures do not exclude youth whose guardians do not have phones (five attempts to locate phone numbers are made before approaching the youth with the Participant Advocate). Approximately 425 phone calls have been made as part of the study; thus far, guardians were reached in about 45% of those calls. Less than 8% of guardians who were reached by research staff verbally declined participation. A small group of these guardians declined participation after hearing information regarding the study procedures. In most cases, however, the guardian did not allow the researcher to explain the study before declining, and others gave permission but did not wish to have forms sent to their homes and were, therefore, excluded and considered to have declined. Of the forms sent to parents, 22% were returned, but only one-third of those parentally consented youth were able to be tested. Generally, this failure to test was because the youth had left the center by the time the signed consent form was received from the parent. Thus, 6% of the total sample was obtained with guardian's consent, while 94% of the sample was obtained using an in-house participant advocate, a procedure very similar to that used with all detention center youth in the 1970s study. Similarly, approximately 17% of the 1970s study was collected at the boys town and boys school facilities where

parental consent was sought for all participants. Thus, although there are differences in the ways the 1970s and 21<sup>st</sup> century samples were gathered, the recruitment procedures of the two studies yielded comparable samples and, more importantly, the testing procedures of the two studies were nearly identical. Descriptive analyses were run on the 21<sup>st</sup> century sample and compared with characteristics of the 1970s sample to check comparability on all relevant characteristics.

Youth in 21<sup>st</sup> century and 1970s samples also differed in the IQ measures they completed. The 1970s study used three subtests of the *WISC-R* (Wechsler, 1974), while participants in the 21<sup>st</sup> century study completed two subtests of the *WASI* (The Psychological Corporation, 1999). Although the Psychological Corporation has not published the correlation between the *WISC-R* and *WASI*, it is known that scores on the *WASI* and *WISC-III* have a correlation of  $r=.72$  for Vocabulary and  $r=.69$  for Similarities (The Psychological Corporation, 1999). Furthermore, scores on the *WISC-III* are highly correlated with scores on the *WISC-R* (Verbal IQ,  $r=.90$ ; Vocabulary,  $r=.77$ ; and Similarities,  $r=.74$ ) (The Psychological Corporation, 1991). Thus, it is assumed that the scores obtained by the 1970s sample on the *WISC-R* can be compared with scores obtained by the 21<sup>st</sup> century sample on the *WASI*.

The method of gathering demographic information, including number of arrests and previous detentions, varied between the two studies. In the 1970s study, youths' offense histories were taken from court records. With the 21<sup>st</sup> century sample, researchers were not provided access to court records; instead, youth were asked to recall the number of times arrested and history of charges. Although this method was less than ideal, a recent study comparing court records to youths' self-reports was completed at the

Philadelphia detention center where the majority of participants were recruited; this study found a moderate positive correlation between self-reports of criminality and court records (Brame, Fagan, Piquero, Schubert & Steinberg, 2004). Therefore, 21<sup>st</sup> century youths' reports probably provide fairly accurate reflections of criminal history; consequently, we used these self-reports to examine the relationship between arrest history and *Miranda* comprehension in the same way that Grisso used court record data in the 1970s study. Similarly, in the 1970s study, the number of previous detentions was obtained from court records, but, in the 21<sup>st</sup> century sample, youth provided this information through self-report. A recent study found a .9 correlation between youths' self-reports of placements in different detention centers and official records of placement (E. Mulvey, personal communication, August 15, 2006). Therefore, it is also assumed that youths' self-reports in the 21<sup>st</sup> century sample provided a fairly accurate report of the number of previous detentions.

### **3.3.4 Method of Analyses**

Alpha was set to .05 for all analyses. Effect sizes were examined for all hypotheses that proposed a null finding. An effect less than a small effect size (i.e. using Cohen's effect size values; Cohen 1988) was interpreted as supporting the null hypothesis. Given the sample sizes, analysis revealed a power of .99 to detect a medium effect size, with alpha set at .05 for the primary hypothesis (1a). There was a 61% chance of detecting a small effect size.

## **4 RESULTS**

It would have been ideal to directly compare the complete data sets from the 1970s and 21<sup>st</sup> century, covarying for any differences between the two samples in age,

IQ, and other relevant demographic variables. However, because the raw data from the 1970s study physically deteriorated and no longer exists, such comparison was not possible. Comparison analyses, therefore, were limited to the information and statistics reported in Grisso's (1981) publication. In this work, most information on youth 16 years of age and younger was reported in a separate series of analyses from those of youth ages 17 through 19, who were tested as part of an adult sample. In addition, not all of the information reported on youth 16 years of age and younger is available for youth ages 17 through 19. Consequently, we limited many analyses of the 21<sup>st</sup> century sample to participants 16 years of age and younger to allow for comparison with results found in the 1970s study. In these cases, for completeness, results for the entire 21<sup>st</sup> century sample (youth 19 years of age and younger) are included in footnotes. However, if not otherwise noted, analyses included all participants 19 years of age and younger.

The instruments in the *MRCI-II* include a fifth prong of the *Miranda* warning. In addition to the items included in Grisso's original instruments, the *CMR-II* contains one additional item, the *CMR-R-II* contains three additional questions, and the *CMV-II* contains 12 additional words. The analyses in this study include only the items that appear in both Grisso's original instruments and in the *MRCI-II* in order to allow for a direct comparison of scores.

Although a Bonferroni correction would be used in most cases to control for the risk of Type 1 error associated with the multiple analyses used to evaluate many of the hypotheses listed below, no correction was used. Because the null hypothesis was expected, it is more conservative not to adjust the alpha level.

#### 4.1 Analysis of Preliminary Hypotheses

Prior to conducting analyses to evaluate hypotheses of interest, we compared testing sites to evaluate whether there were key differences that might impact the interpretability of results. A one-way ANOVA was used to compare the average age of participants at each of the three testing centers. We expected the average age at one of the PA centers to be lower because this center was only used in the last two years of data collection, after most of the older participants needed for the study had participated. As predicted, a significant difference was found between the 3 testing centers ( $F(2, 181) = 6.50, p = .002, \eta_p^2 = .07$ , medium effect size) (see Table 2). For this reason, a MANCOVA, covarying for age, was used to evaluate all hypotheses comparing the three centers.

To test whether participants from the three testing centers differed significantly on *Miranda* comprehension (*CMR-II*, *CMR-R-II*, *CMV-II*, and *FRI* scores) and intelligence (VIQ scores), a one-way MANCOVA was conducted, controlling for age. Previous research has shown that verbal IQ is associated with *Miranda* comprehension and that scores on the individual *Miranda* comprehension instruments are correlated (Grisso, 1981; Colwell, Cruise, Guy, McCoy, Fernandez & Ross, 2005); therefore, all five scores were entered into the MANCOVA simultaneously as dependant variables. As predicted, no significant main effect was found for testing center on *CMR-R-II*, *CMV-II*, *FRI* or verbal intelligence scores [*CMR-R-II*:  $F(2, 154) = 1.52, p = .223, \eta_p^2 = .02$ , small effect size; *CMV-II*:  $F(2, 154) = .025, p = .975, \eta_p^2 = .00$ , sub-small effect size; *FRI*:  $F(2, 154) = 1.06, p = .35, \eta_p^2 = .014$ , sub-small effect size; and VIQ:  $F(2, 154) = .922, p = .40, \eta_p^2 = .012$ , small effect size] (see Table 2). Testing center was significantly associated with *CMR-II* scores [*CMR-II*:  $F(2, 154) = 3.23, p = .04, \eta_p^2 = .04$ , small effect size]

A 3 (testing center: MA center, PA center 1, PA center 2) x 2 (ethnicity: minority, non-minority<sup>2</sup>) chi-square analysis was conducted to examine the relationship between testing center and ethnicity of participants. A significant relationship was found between testing center and ethnicity ( $\chi^2(2, N = 168) = 15.68, p < .001, V^2 = .028$ )<sup>3</sup> (see Table 3). Of the 55 participants from the MA testing center, 65% (36) were from an ethnic minority group. At the two PA testing centers, however, minority youth represented 90% (87) and 94% (15) of the respective samples.

Another 3 (testing center: MA center, PA center 1, PA center 2) x 2 (special education referral: yes, no) chi-square analysis was conducted to examine the relationship between testing center and history of placement in special education. A significant relationship was found between these variables ( $\chi^2(2, N = 167) = 12.35, p = .002, V^2 = .074$ ) (see Table 3). Fifty-five percent of youth from the MA center reported having participated in special education; however, only 27% of the youth from each of the PA testing centers reported a history of special education. Because it is known that males are referred to special education services almost twice as often as girls (Vardill, 1996; Wright & Payne, 1979; see Wehmeyer & Schwartz 2001 for explanation of reasons for differential referral rates), and the youth tested at the MA center were all male, a second 3(testing center: MA center, PA center 1, PA center 2) x 2 (special education referral: yes, no) chi-square analysis was conducted using only the data from the male participants

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<sup>2</sup> Ethnicity was categorized as minority or non-minority for this analysis because of the small numbers of non-African-American minority youth at each of the testing centers.

<sup>3</sup> Including only Caucasian and African-American participants, for consistency with Grisso's analyses, a 3 (testing center: MA center, PA center 1, PA center 2) x 2 (ethnicity: African-American, Caucasian) chi-square analysis revealed a similar relationship between ethnicity and testing center ( $\chi^2(2, N=116) = 36.48, p < .001, V^2 = .315$ ).

at each testing center. The significant relationship between testing center and special education referral remained ( $\chi^2(2, N = 125) = 6.79, p = .034, V^2 = .369$ ).

Two one-way ANCOVAs, covarying age, were used to compare the average number of arrests and previous DHS commitments at each of the three testing centers. No significant differences were found in number of arrests ( $F(2, 163) = 2.56, p = .080, \eta_p^2 = .03$ , small effect size); however a significant difference was observed between the three testing centers in number of previous DHS commitments ( $F(2, 164) = 4.11, p = .018, \eta_p^2 = .05$ , small effect size ) (see Table 1) with more previous commitments at the MA testing center.



Table 2

Miranda Comprehension and Verbal IQ by Testing Center: Means and Standard

Deviations.

	MA center (males only) <i>n</i> = 55	Testing Center	
		PA center 1 <i>n</i> = 112	PA center 2 <i>n</i> = 16
<i>CMR-II</i>			
Male	6.19 (1.87)	5.49 (1.89)	4.40 (2.79)
Female	---	5.33(1.97)	5.50 (2.00)
Total	---	5.44 (1.90)	5.08 (2.29)
<i>CMR-R-II</i>			
Male	9.52 (1.80)	9.36(1.72)	8.60 (1.95)
Female	---	8.93(1.48)	8.50 (2.56)
Total	---	9.21(1.65)	8.54 (2.26)
<i>CMV-I</i>			
Male	5.76 (2.60)	6.23 (2.72)	5.20 (2.59)
Female	---	5.30 (2.65)	6.00 (2.33)
Total	---	5.92 (2.72)	5.69 (2.36)
<i>FRI</i>			
Male	22.79 (4.12)	22.00 (4.09)	21.80 (2.17)
Female	---	21.53 (4.47)	23.63 (4.75)
Total	---	21.87 (4.20)	22.92 (3.95)
Verbal IQ			
Male	83.33 (13.57)	79.61 (12.41)	84.60 (5.90)
Female	---	81.13 (9.66)	80.00 (12.95)
Total	---	80.11 (11.54)	81.77 (10.72)

See Table 4 for means and standard deviations of the entire 21<sup>st</sup> century sample.

Table 3

## Ethnicity and History of Special Education Referral by Testing Center

	Testing Center			Total
	MA center	PA center 1	PA center 2	
<b>Ethnicity</b>				
Minority	36 (65%)	87 (90%)	15 (94%)	138 (82%)
Non-minority	19 (35%)	10 (10%)	1 (6%)	30 (18%)
<b>History of Special Education Referral</b>				
Yes	30 (55%)	26 (26%)	4 (27%)	60 (36%)
No	25 (45%)	71 (74%)	11 (73%)	107 (64%)

As predicted based on the 1970s findings, a one-way MANOVA revealed no significant differences between the *Miranda* comprehension and verbal IQ scores of male and female participants in the 21<sup>st</sup> century sample [*CMR-II*:  $F(1, 156) = 1.15, p = .29, \eta_p^2 = .007$ , sub-small effect size; *CMR-R-II*:  $F(1, 156) = 2.92, p = .089, \eta_p^2 = .018$ , small effect size; *CMV-II*:  $F(1, 156) = 1.16, p = .28, \eta_p^2 = .007$ , sub-small effect size; *FRI*:  $F(1, 156) = 0.26, p = .61, \eta_p^2 = .002$ , sub-small effect size].

Because raw data from the 1970s study no longer exists, it was not possible to run a series of independent samples t-tests or ANVOAs/MANOVAs to compare the ages, IQ scores, and number of previous arrests of the two samples. Hand calculations of independent samples t-tests were limited because standard deviations were not reported for participants ages 17 through 19 in the 1970s sample. Therefore, for consistency, comparisons between the two samples were calculated by entering the means reported in Grisso's (1981) work as the test value in a series of single-sample t-tests. The use of single-sample t-tests allowed the individual scores of participants in the 21<sup>st</sup> century

sample to be included in the analyses; however it does not take into account the standard deviation of the 1970s participants' scores. When available, independent samples t-tests, calculated by hand, using the means and standard deviations from both samples are footnoted. Single and independent t-tests produced similar results in all analyses, identifying the same significant differences between the two samples.

Including only the youth 16 years of age and younger, three single-sample t-tests were conducted to examine differences between the 1970s sample and the 21<sup>st</sup> century sample, entering the mean values from the 1970s study as the test value. Table 3 presents the means and standard deviations for the *Miranda* comprehension scores and demographic variables of interest for both the 1970s and 21<sup>st</sup> century samples. Results revealed a significant difference in age between the 1970s sample and the 21<sup>st</sup> century sample ( $t(108) = 2.48, p = .015, d = .24$ , small effect size). A significant difference was also found between the verbal IQ scores of the 1970s sample and the 21<sup>st</sup> century sample ( $t(103) = -4.84, p < .001, d = .24$ , small effect size). The third single-sample t-tests revealed a significant difference between the number of previous arrests in the 1970s sample and the 21<sup>st</sup> century samples ( $t(102) = 2.44, p = .016, d = 2.12$ , large effect size). On average, the youth 16 years-of-age and younger who participated in the 21<sup>st</sup> century study were slightly older, scored lower on measures of verbal IQ, and had been arrested more times than their counterparts in the 1970s study<sup>4</sup>.

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<sup>4</sup> Independent sample t-tests revealed the same significant differences in age ( $t(538) = -1.98, p = .048$ ), IQ ( $t(533) = 3.34, p < .001$ ), and number of previous arrests ( $t(532) = -2.12, p = .034$ ).

Table 4

Scores on the *Miranda* Instruments and Demographic Variables of Interest by Sample (1970s or 21<sup>st</sup> Century): Means and Standard Deviations

	1970s Sample n= 431	21 <sup>st</sup> Century Sample n= 109
<u>Participants 16 years of age and younger</u>		
Age	14.55 (1.24)	14.81 (1.08)
Verbal IQ	88.39 (16.12)	82.78 (11.82)
Number of Arrests	3.38 (3.47)	4.18 (3.34)
<i>CMR (II)</i>	5.86 (1.85)	5.53 (1.96)
<i>CMR-R (II)</i>	9.38 (1.76)	9.17 (1.81)
<i>CMV (II)</i>	7.93 (2.62)	5.70 (2.61)
<i>FRI</i>	23.13 (3.80) <sup>a</sup>	22.48 (3.95)
<hr/>		
	1970s Sample n = 54	21 <sup>st</sup> Century Sample n = 73
<u>Participants age 17-19</u>		
<i>CMR (II)</i>	6.64 <sup>b</sup>	5.70 (2.09)
<i>CMR-R (II)</i>	---	9.26 (1.84)
<i>CMV (II)</i>	8.74 <sup>b</sup>	6.33 (2.84)
<i>FRI</i>	25.35 <sup>b</sup>	22.03 (4.27) <sup>c</sup>

<sup>a</sup> n=199

<sup>b</sup> Standard deviation was not reported (Grisso, 1981)

<sup>c</sup> n=66

Three repeated measures t-tests were conducted to determine if scores on the *Instruments for Assessing Understanding and Appreciation of Miranda Rights* differed significantly from scores on the *Miranda Rights Comprehension Instruments-II* within the 21<sup>st</sup> century sample. No significant differences were found between youths' scores on the *CMR* and *CMR-II* ( $t(14) = -1.58, p = .136, d = .30$ , small effect size), scores on the

*CMR-R* and *CMR-R-II* ( $t(14) = -3.07, p = .764, d = .06$ , small effect size), or scores on the *CMV* and *CMV-II* ( $t(14) = -1.10, p = .289, d = .28$ , small effect size).

Table 5

Scores on the Two Versions of the *Miranda* Instruments Within the 21<sup>st</sup> Century Sample: Means and Standard Deviations ( $n = 15$ )

	<i>Instruments for Assessing Understanding and Appreciation of Miranda Rights</i>	<i>Miranda Rights Comprehension Instruments- II</i>
<i>CMR (II)</i>	6.33 (2.09)	5.67 (2.29)
<i>CMR-R (II)</i>	9.20 (2.48)	9.07 (1.91)
<i>CMV (II)</i>	7.60 (2.32)	6.87 (2.83)

#### 4.2 Analysis of Primary Hypotheses: Quantitative

Examining data from participants 16 years of age and younger, four single-sample t-tests were conducted to determine if *Miranda* comprehension scores differed significantly between youth in the 1970s and 21<sup>st</sup> century, entering the mean values from the 1970s study as the test value. Results revealed no significant differences between scores on the *CMR* and *CMR-II* ( $t(108) = -1.75, p = .084, d = .17$ , sub-small effect size), scores on the *CMR-R* and *CMR-R-II* ( $t(108) = -1.24, p = .219, d = .12$ , sub-small effect size), or scores on the *FRI* ( $t(101) = -1.66, p < .10, d = .16$ , sub-small effect size). Significant differences were found between the two samples on the *CMV* and *CMV-II* ( $t(108) = -8.92, p < .001, d = .85$ , large effect size). Table 4 presents the means and standard deviations of *Miranda* scores for both samples. Youth from the 1970s study,

who were 16 years of age and younger, scored significantly higher on the *CMV* than did same age youth in the 21<sup>st</sup> century.

The *Miranda* scores of youth ages 17 through 19 were compared in the same manner, entering mean scores from the 1970s sample as the test value, in a series of three single-sample t-tests [Grisso (1981) did not report a mean *CMR-R* score for youth ages 17 through 19]. Results revealed significant differences in scores between the two samples on the *CMR* and *CMR-II* ( $t(72) = -3.86, p < .001, d = .45$ , small effect size), *CMV* and *CMV-II* ( $t(72) = -7.25, p < .001, d = .85$ , large effect size), and the *FRI* ( $t(66) = -6.35, p < .001, d = .78$ , large effect size). Table 4 presents the means and standard deviations of *Miranda* comprehension scores for 17 through 19 year olds in the 21<sup>st</sup> century sample, and the mean scores of same aged participants in the 1970s sample [Grisso (1981) reported no standard deviations for this age group].

Fourteen chi-square analyses were performed to examine if the level of observed understanding of each item on the *CMR-II*, each prong on the *CMR-R-II*, and each item on the *CMV-II* differed significantly from the expected level of understanding, based on the results of the 1970s study<sup>5</sup>. Only youth 16 years of age and younger were included in these analyses because Grisso (1981) did not report these scores for 17 through 19 year olds. The 1970s and 21<sup>st</sup> century samples obtained significantly different frequencies of adequate, questionable, and inadequate understanding on all four questions of the *CMR* (1. Right to silence:  $\chi^2(1, N = 109) = 206.86, p < .001$ ; 2. Statement will be used in court:  $\chi^2(2, N = 109) = 23.30, p < .001$ ; 3. Right to attorney before and during questioning:  $\chi^2(2, N = 109) = 48.05, p < .001$ ; 4. Right to appointed attorney:  $\chi^2(2, N = 109) = 18.18, p <$

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<sup>5</sup> To calculate the expected values, the observed frequencies from the 1970s sample of 431 youths were transformed to be proportionally equivalent to a sample of 109 youths, the number of youths in the 21<sup>st</sup> century study.

.001), and all four subtests of the *CMR-R*<sup>6</sup> (1:  $\chi^2(2, N = 109) = 12.85, p = .002$ ; 2:  $\chi^2(1, N = 109) = 7.27, p = .007$ ; 3:  $\chi^2(2, N = 109) = 7.37, p = .025$ ; 4:  $\chi^2(2, N = 109) = 30.36, p < .001$ ). Significant differences were also found in scores between the 21<sup>st</sup> century and 1970s samples on five of the six vocabulary words included in both the *CMV* and *CMV-II* (consult:  $\chi^2(2, N = 109) = 46.24, p < .001$ ; attorney:  $\chi^2(2, N = 109) = 23.43, p < .001$ ; entitled:  $\chi^2(2, N = 109) = 133.27, p < .001$ ; appoint:  $\chi^2(2, N = 109) = 63.01, p < .001$ ; right:  $\chi^2(2, N = 109) = 40.04, p < .001$ ). Interrogation was the only item on which the two samples did not differ significantly ( $\chi^2(2, N = 109) = 2.46, p = .293$ ). Table 6 presents the percentage of youth in the 1970s and 21<sup>st</sup> century samples who scored adequately, questionably, and inadequately on each item.

Table 6

Percentage of Sample at Each Level of Understanding.

	Level of Understanding		
	Adequate	Questionable	Inadequate
<i>CMR (II)</i>			
Right to Silence			
1970s <sup>a</sup>	89%	2*	9*
21 <sup>st</sup> Cent <sup>b</sup>	46	27*	27*
Statement will be used in court			
1970s <sup>a</sup>	63	13	24
21 <sup>st</sup> Cent <sup>b</sup>	59	27	14
Right to attorney before and during questioning			
1970s <sup>a</sup>	30	25	45
21 <sup>st</sup> Cent <sup>b</sup>	42	45	13
Right to appointed attorney			
1970s <sup>a</sup>	85	10	5
21 <sup>st</sup> Cent <sup>b</sup>	72	16	12

<sup>6</sup> When analyzing *CMR-R* and *CMR-R-II* scores, scores of 0 (inadequate) and 1 (questionable) were collapsed into a single category (less than adequate) because of the low expected and observed counts in these cells that would have prevented the use of chi square analysis.

<i>CMV (II)</i>		Adequate	Questionable	Inadequate
Consult				
	1970s <sup>a</sup>	28	44	28
	21 <sup>st</sup> Cent <sup>b</sup>	6	39	55
Attorney				
	1970s <sup>a</sup>	65	29	6
	21 <sup>st</sup> Cent <sup>b</sup>	49	35	16
Entitled				
	1970s <sup>a</sup>	77	14	9
	21 <sup>st</sup> Cent <sup>b</sup>	36	27	37
Appoint				
	1970s <sup>a</sup>	81	11	8
	21 <sup>st</sup> Cent <sup>b</sup>	53	20	27
Right				
	1970s <sup>a</sup>	27	64	9
	21 <sup>st</sup> Cent <sup>b</sup>	19	54	27
Interrogation				
	1970s <sup>a</sup>	38	3	59
	21 <sup>st</sup> Cent <sup>b</sup>	32	5	63

		Scores			
		3	2	1	0
<i>CMR-R (II)</i>					
Right to Silence					
	1970s <sup>c</sup>	60	29	10*	1*
	21 <sup>st</sup> Cent <sup>b</sup>	43	39	17*	1*
Statement will be used in court					
	1970s <sup>c</sup>	55	38*	7*	0*
	21 <sup>st</sup> Cent <sup>b</sup>	68	30*	2*	0*
Right to attorney before and during questioning					
	1970s <sup>c</sup>	31	49	17*	3*
	21 <sup>st</sup> Cent <sup>b</sup>	40	36	21*	3*
Right to appointed attorney					
	1970s <sup>c</sup>	40	52	8*	0*
	21 <sup>st</sup> Cent <sup>b</sup>	34	45	20*	1*

\* Scores collapsed into a single “less than adequate” category.

<sup>a</sup> n = 431

<sup>b</sup> n = 109

<sup>c</sup> n = 105



These results provide some description and explanation of the significant differences observed, and not observed, in the t-test analyses. The relationship between the two samples was varied on the *CMR*. It seems that 21<sup>st</sup> century youth are better able to understand and explain the third prong of the *Miranda* warning than their counterparts in the 1970s. Youth today also seem to have made progress in their understanding of the second prong. Fewer youth in the 21<sup>st</sup> century sample received scores of “inadequate” on the second prong of the *CMR* than in the 1970s study, and many more 21<sup>st</sup> century participants fell in the “questionable range.” Youth today seem to have worse understanding, however, of the first and fourth prongs of the warning. Three times more 21<sup>st</sup> century youth showed inadequate understanding of the first prong of the warning than would be expected based on the 1970s results. On the *CMV-II*, consistently fewer than expected numbers of youth exhibited adequate understanding. Proportionally more youth in the 21<sup>st</sup> century study show inadequate *Miranda* comprehension based on *CMV* and *CMR-R* scores. At the same time, *CMR-II* scores revealed that a smaller percentage of the 21<sup>st</sup> century study received inadequate scores on one or more items. The percentage of youth obtaining zero-credit, or “inadequate” scores on one or more items in both the 1970s and 21<sup>st</sup> century sample are listed in Table 7.

Table 7

Percentage of Youth Receiving “Inadequate” Scores

	1970s Sample	21 <sup>st</sup> Century Sample
<i>CMR</i> (II)		
Obtained “Inadequate” Score on		
One item	36.2	20.2
Two items	12.8	12.8
Three items	4.4	5.5
Four items	1.9	.9
One or more items	55.3	39.4
<i>CMV</i> (II)		
Obtained “Inadequate” Score on		
One item	29.9	21.1
Two items	19.3	15.6
Three items	7.7	26.6
Four items	3.0	13.8
Five items	3.0	5.5
Six items	0.5	1.8
One or more items	63.3	84.4

In his analysis of the 1970s study, Grisso (1981) reported Pearson correlations of age and IQ (the two factors he found to correlate most with *Miranda* comprehension scores) with scores on the *CMR*, *CMR-R*, and *CMV*. He also reported the partial correlations of age and IQ with scores on the *CMR*, *CMR-R*, and *CMV* while controlling for the combination of age, ethnicity and IQ. He reported correlations and partial correlations only for youth 16 years of age and younger; thus, all analyses of the 21<sup>st</sup> century sample were also limited to participants 16 years of age and younger. To allow for comparison, we calculated Pearson correlations between *Miranda* comprehension scores (on the *CMR-II*, *CMR-R-II*, and *CMV-II*) and the variables we thought might be associated with *Miranda* comprehension, based on previous research (ethnicity, number of arrests, number of previous DHS detentions, age, and verbal IQ).

Verbal IQ correlated significantly with all three measures of *Miranda* comprehensions ( $p < .001$ ). The number of previous detentions correlated significantly with *CMV-II* scores ( $p = .005$ ). Age was not significantly associated with any *Miranda* comprehension score. In the 1970s sample Grisso (1981) observed Pearson correlations ranging from .22 to .44 between age and *Miranda* comprehension. In today's sample, Pearson correlations ranged from .13 to .18. See Table 8 for all obtained correlations.

For consistency with the 1970s analyses, we calculated five partial correlation equations; in each, we examined the relationship between *Miranda* comprehension scores and one of the following five potential predictor variables: ethnicity, number of arrests, number of previous DHS detentions, age, and Verbal IQ; the other four variables served as control variables in the equation. Once controlling for the other four predictor variables, the number of previous detentions was no longer significantly associated with *CMV-II* scores, but it was significantly related to *CMR-R-II* scores ( $p = .020$ ). Verbal IQ remained significantly associated with all three measures of *Miranda* comprehension ( $p < .001$ ), and the relationships between age and *CMR-II* scores ( $p = .019$ ) and age and *CMV-II* scores ( $p = .048$ ) emerged as significant. Table 9 presents the partial correlation values.

Although partial correlations were calculated to allow for comparison with the 1970s sample, the preferred method of analyzing this hypothesis would be to use a multiple regression equation, examining one predictor variable while controlling for each of the others. When *CMR-II* scores were simultaneously regressed on all five predictor

variables<sup>7</sup>, only age ( $p = .027$ ) and Verbal IQ ( $p < .001$ ) were significantly associated with *CMR-II* scores. When *CMR-R-II* scores were simultaneously regressed on all five predictor variables simultaneously, both number of previous DHS detentions ( $p = .012$ ) and Verbal IQ ( $p < .001$ ) were significantly associated with *CMR-R-II* scores. When *CMV-II* scores were simultaneously regressed on all five predictor variables, only Verbal IQ ( $p < .001$ ) was significantly associated with *CMV-II* scores. See Table 10 for  $b$ ,  $SE_b$ , and  $p$  values. Table 11 presents the percent of variance in *CMR* and *CMV* accounted for by IQ, age, and ethnicity in both the 1970s and 21<sup>st</sup> century samples<sup>8</sup>.

Table 8

Pearson  $r$  Correlations of Demographic Characteristics and *Miranda* Comprehension Scores for Youth ages 13 through 16

	<i>CMR-II</i>	<i>CMV-II</i>	<i>CMR-R-II</i>
Ethnicity	.05	-.04	-.10
Number of Arrests	.15	.18	.08
Number of Previous DHS commitments	.13	.27**	-.05
Age	.18	.10	.13
Verbal IQ	.49***	.54***	.40***

\*\*  $p < .01$  \*\*\*  $p < .001$

<sup>7</sup> In all multiple regression analyses, ethnicity was dummy coded. African-American youth were chosen as the baseline for comparison because they represented the largest proportion of youth in the 21<sup>st</sup> century sample.

<sup>8</sup> These values are reported to allow for comparison with Grisso’s 1970s analyses; however, it is important to note that calculations of this type assign all variance shared by the predictor variables to the first variable entered, in this case IQ, and, as such, may overestimate the contribution of IQ as a predictor (King, 1986).

Table 9

Partial Correlations of Demographic Variables and *Miranda* Comprehension Scores for Youth ages 13 through 16

	<i>CMR-II</i>	<i>CMR-R-II</i>	<i>CMV-II</i>
1. Ethnicity (controlling for predictors 2,3,4 and 5)	.105	-.02	-.04
2. Number of Arrests (controlling for predictors 1,3,4 and 5)	.04	.14	-.05
3. Number of Previous DHS commitments (controlling for predictors 1,2,4 and 5)	-.05	-.24*	.16
4. Age (controlling for predictors 1,2,3 and 5)	.24*	.17	.21*
5. Verbal IQ (controlling for predictors 1,2,3 and 4)	.54***	.45***	.56***

\*  $p < .05$  \*\*\*  $p < .001$

Table 10

Results of Regressing *Miranda* Scores on Demographic Characteristics for Youth ages 13 through 16

	<i>CMR-II</i>	<i>CMR-R-II</i>	<i>CMV-II</i>
Age	$b = .376$ $SE_b = .17$ $p = .03$	$b = .28$ $SE_b = .16$ $p = .08$	$b = .35$ $SE_b = .21$ $p = .09$
Ethnicity			
Asian	$b = -.22$ $SE_b = 1.22$ $p = .87$	$b = 1.29$ $SE_b = 1.15$ $p = .27$	$b = -.19$ $SE_b = 1.51$ $p = .89$
White non-Hispanic	$b = .54$ $SE_b = .48$ $p = .26$	$b = -.20$ $SE_b = .45$ $p = .67$	$b = .19$ $SE_b = .59$ $p = .75$
Hispanic or Latino	$b = .15$ $SE_b = .53$ $p = .78$	$b = .67$ $SE_b = .50$ $p = .19$	$b = -.46$ $SE_b = .66$ $p = .49$
Other or Unknown	$b = .57$ $SE_b = .64$ $p = .38$	$b = -.27$ $SE_b = .60$ $p = .64$	$b = .49$ $SE_b = .79$ $p = .54$
Number of Arrests	$b = .02$ $SE_b = .07$ $p = .79$	$b = .10$ $SE_b = .07$ $p = .14$	$b = -.05$ $SE_b = .09$ $p = .56$
Number of Previous DHS detentions	$b = -.04$ $SE_b = .09$ $p = .63$	$b = -.22$ $SE_b = .08$ $p = .01$	$b = .17$ $SE_b = .11$ $p = .13$
Verbal IQ	$b = .09$ $SE_b = .02$ $p < .001$	$b = .07$ $SE_b = .02$ $p < .001$	$b = .12$ $SE_b = .02$ $p < .001$

*Note.* African American youth served as the baseline for ethnicity.

Table 11

Variance in *CMR* and *CMV* Scores Accounted for by IQ, Age, and Ethnicity

Variable	1970s Sample		21 <sup>st</sup> Century Sample	
	Multiple <i>R</i>	Cumulative % of Variance	Multiple <i>R</i>	Cumulative % of Variance
<i>CMR</i>				
IQ	.498	.248	.504	.254
Age	.541	.292	.553	.306
Ethnicity	.558	.311	.565	.320
<i>CMV</i>				
IQ	.613	.376	.568	.323
Age	.714	.510	.596	.355
Ethnicity	.723	.523	.604	.364

A slightly different relationship between predictor variables and *Miranda* comprehensions scores was seen when all participants (youth 13 through 19 years of age) were included in analyses. Verbal IQ correlated significantly with all three *Miranda* comprehension scores ( $p < .01$ ). The number of arrests correlated significantly with *CMR-II* scores ( $p = .01$ ), and both the number of arrests and number of previous detentions correlated significantly with *CMV-II* scores ( $p = .02$ ). Age was not significantly correlated with any *Miranda* comprehension scores. See Table 12 for all obtained correlations.

When we calculated partial correlation equations for each of the five predictor variables, with the other four predictors serving as control variables, the number of previous detentions and the number of arrests were no longer significantly associated with *Miranda* comprehension scores. Age, however, was significantly related to scores on all three instruments (*CMR-II*:  $p = .010$ ; *CMR-R-II*:  $p = .010$ ; *CMV-II*:  $p < .001$ ). Verbal IQ was also significantly associated with all three measures of *Miranda*

comprehension (*CMR-II*:  $p < .001$ ; *CMR-R-II*:  $p < .001$ ; *CMV-II*:  $p < .001$ ). Table 13 presents the partial correlations.

Similar results were found when *Miranda* comprehension scores were regressed on the predictor variables. Of the demographic variables entered, only age and Verbal IQ were significantly associated with *Miranda* comprehension scores. Both were significantly associated with all three measures of comprehension ( $p \leq .01$ ). See Table 14 for  $b$ ,  $SE_b$ , and  $p$  values.

Table 12  
Pearson r Correlations of Demographic Variables and *Miranda* Comprehension Scores for Youth age 13 through 19.

	<i>CMR-II</i>	<i>CMR-R-II</i>	<i>CMV-II</i>
Ethnicity	.02	-.09	-.08
Number of Arrests	.20**	.15	.18*
Number of Previous DHS commitments	.13	.05	.18*
Age	.08	.10	.14
Verbal IQ	.52**	.48**	.56**

\*  $p < .05$  \*\*  $p < .01$



Table 13

Partial Correlations of Demographic Variables and *Miranda* Comprehension Scores for Youth ages 13 through 19.

	<i>CMR-II</i>	<i>CMR-R-II</i>	<i>CMV-II</i>
1. Ethnicity (controlling for predictors 2,3,4 and 5)	.13	-.02	-.03
2. Number of Arrests (controlling for predictors 1,3,4 and 5)	.13	.13	.08
3. Number of Previous DHS commitments (controlling for predictors 1,2,4 and 5)	-.04	-.12	.04
4. Age (controlling for predictors 1,2,3 and 5)	.21**	.21**	.28***
5. Verbal IQ (controlling for predictors 1,2,3 and 4)	.58***	.49***	.60***

\*\*\*  $p < .001$

Table 14

Results of Regressing *Miranda* scores on demographic characteristics for Youth ages 13 through 19.

	<i>CMR-II</i>	<i>CMR-R-II</i>	<i>CMV-II</i>
Age	$b = .21$ $SE_b = .08$ $p = .01$	$b = .20$ $SE_b = .08$ $p = .01$	$b = .37$ $SE_b = .11$ $p < .001$
Ethnicity			
Asian	$b = .13$ $SE_b = .96$ $p = .90$	$b = .72$ $SE_b = .93$ $p = .44$	$b = -.78$ $SE_b = 1.26$ $p = .53$
Caucasian	$b = .43$ $SE_b = .36$ $p = .23$	$b = -.24$ $SE_b = .35$ $p = .49$	$b = -.05$ $SE_b = .47$ $p = .92$
Hispanic	$b = .20$ $SE_b = .37$ $p = .59$	$b = .08$ $SE_b = .36$ $p = .83$	$b = -.12$ $SE_b = .49$ $p = .81$
Other	$b = .71$ $SE_b = .45$ $p = .11$	$b = -.01$ $SE_b = .43$ $p = .97$	$b = -.12$ $SE_b = .59$ $p = .84$
Number of Arrests	$b = .07$ $SE_b = .05$ $p = .12$	$b = .08$ $SE_b = .04$ $p = .09$	$b = .05$ $SE_b = .06$ $p = .36$
Number of Previous DHS detentions	$b = -.04$ $SE_b = .06$ $p = .52$	$b = -.08$ $SE_b = .05$ $p = .13$	$b = .04$ $SE_b = .08$ $p = .59$
Verbal IQ	$b = .09$ $SE_b = .01$ $p < .001$	$b = .076$ $SE_b = .01$ $p < .001$	$b = .13$ $SE_b = .02$ $p < .001$

A 7 (age; 13 through 19) x 5 (IQ level; 70 and below, 71-80, 81-90, 91-100, 101 and above) ANOVA was conducted to examine the relationship between age, IQ, and

*CMR-II* scores to compare relationships with those obtained in the 1970s. Results confirmed the expected main effects for age ( $F(6, 110) = 2.35, p = .036$ ) and verbal IQ ( $F(4,110) = 15.95, p < .001$ ). In the 1970s study, a significant interaction was observed between age and IQ; no significant interaction was found in the 21<sup>st</sup> century sample ( $F(19,110) = .915, p = .566$ ).

A one-way ANOVA revealed no significant differences in IQ by age group ( $F(7,163) = 1.40, p = .208$ ). Post-hoc analysis of the main effect for age on *CMR-II* scores was conducted using Duncan's Multiple Range Test, the very conservative test used in the 1970s study to examine differences between age groups. No significant differences were seen between the *CMR-II* scores of different ages ( $p = .06$ ). In order to explore any differences that might exist between the age groups, groups were also compared using a less conservative Sidak correction. Still, no significant differences were seen between the age groups ( $p \geq .65$ ), with mean differences ranging from 0.02 to 1.2.

Although Grisso (1981) did not report the significance of differences in *CMR-II* scores observed between the IQ ranges in the 1970s sample, the differences observed in the 21<sup>st</sup> century sample were explored. Duncan's Multiple Range Test, used by Grisso for other post-hoc comparisons, revealed no significant differences between IQ ranges on *CMR-II* scores. A less conservative Sidak correction, however, revealed that *CMR-II* scores of the youth scoring both 70 or below and between 71 and 80 differed significantly from scores produced by youth in all other IQ ranges ( $p \leq .03$ ). *CMR-II* scores of youth with IQs in the ranges of 81-90, 91-100, and greater than or equal to 101 did not differ significantly from one another ( $p \geq .86$ ). See Figure 1 for *CMR-II* means by age and

verbal IQ in the 21<sup>st</sup> century sample. Figure 2 illustrates the relationship observed in the 1970s sample. See Table 13 for the number of 21<sup>st</sup> century youth within each age and verbal IQ level. Only those levels with three or more participants were included in Figures 1 through 4.

Table 15

Number of 21<sup>st</sup> Century Youth at Each Age and IQ Range

Age	IQ Classification					Total
	≤ 70	71-80	81-90	91-100	101+	
13	0	2	3	0	3	8
14	3	9	3	3	1	19
15	4	7	9	4	2	26
16	8	8	11	5	1	33
17	4	11	7	6	1	29
18	3	6	4	0	0	13
19	5	3	3	0	1	12
Total	27	46	40	18	9	140

Figure 1. 21st Century *CMR-II* Scores by Age and IQ (Ages 13 through 19)

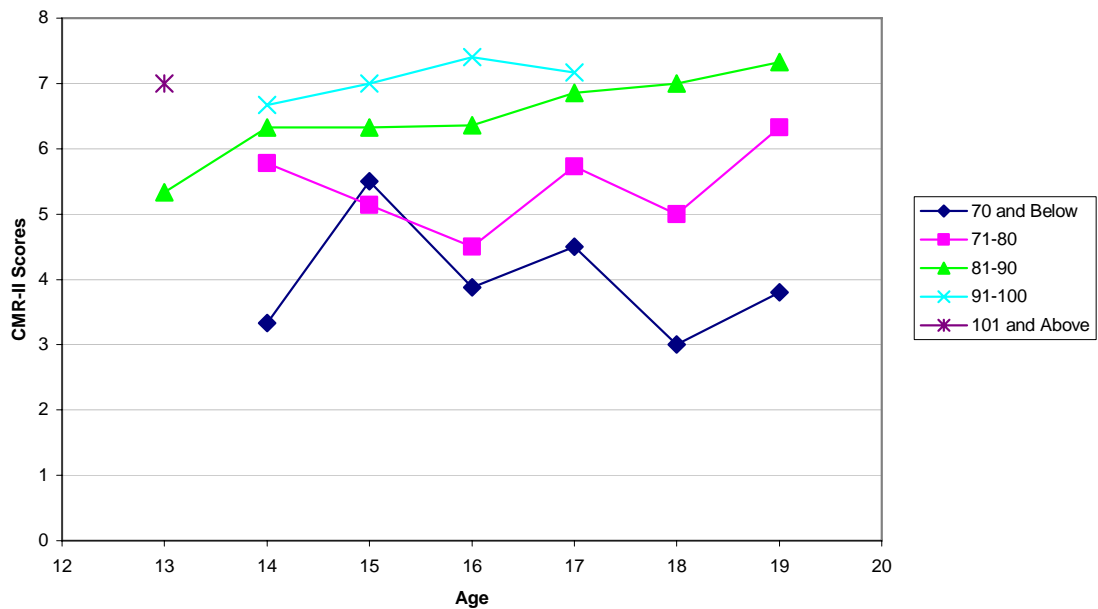
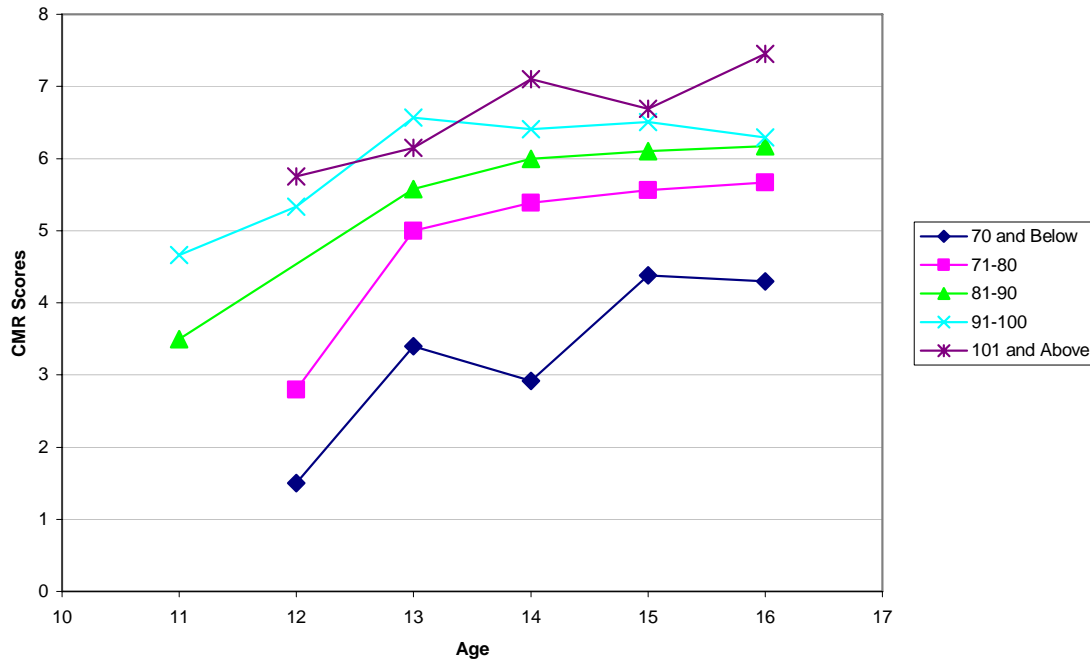


Figure 2. 1970s *CMR* Scores by Age and IQ  
(Ages 11 through 16)



A 7(age; 13 through 19 years) x 5(IQ level; 70 and below, 71-80, 81-90, 91-100, 101 and above) ANOVA was conducted to examine the relationship between age, IQ, and *CMV-II* scores to see if relationships corresponded to those from the 1970s. Results revealed the expected main effect for verbal IQ ( $F(4, 110) = 21.92, p < .001$ ) but did not support the proposed main effect of age ( $F(6, 110) = 1.61, p = .151$ ). Because the age groups did not differ significantly in their scores on the *CMV-II*, no post hoc analyses were conducted.

As with *CMR-II* scores, when the *CMV-II* scores of the different IQ ranges were compared using a conservative Duncan's Multiple Range Test, no significant differences were revealed. When a less conservative Sidak correction was used, a relationship similar to that seen between IQ and *CMR-II* scores appeared. Youth scoring 70 or below, and those scoring between 71 and 80 differed significantly from scores produced by

youth in all other IQ ranges ( $p \leq .002$ ). *CMV-II* scores of youth with IQs in the ranges of 81-90, 91-100, and less than or equal to 101 did not differ significantly from one another ( $p \geq .48$ ). See Figure 3 for *CMV-II* means by age and verbal IQ in the 21<sup>st</sup> century sample. Figure 4 illustrates the relationship observed in the 1970s study.

Figure 3. 21st Century *CMV-II* Scores by Age and IQ  
(Ages 13 through 19)

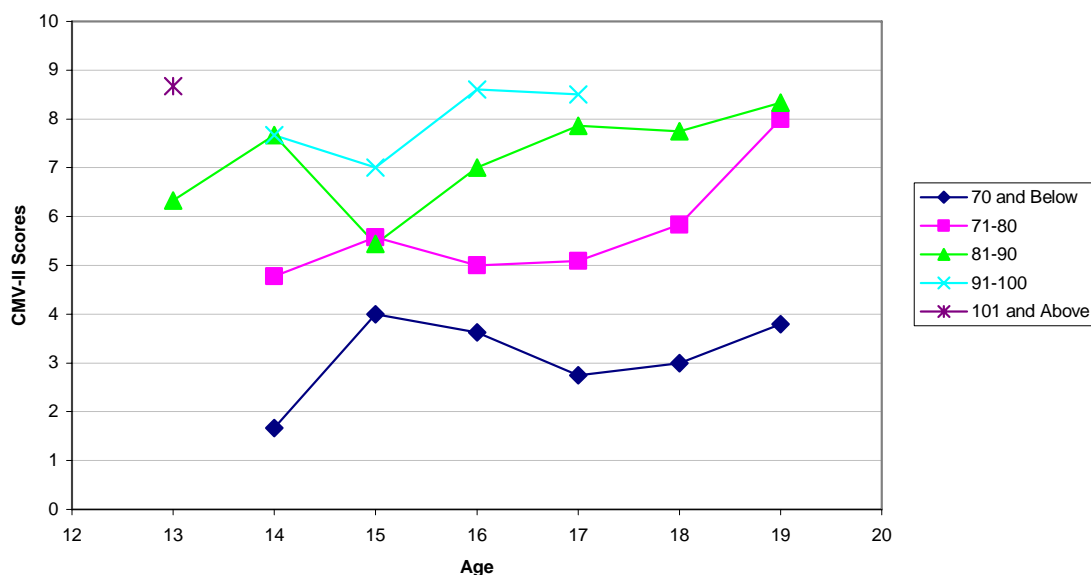
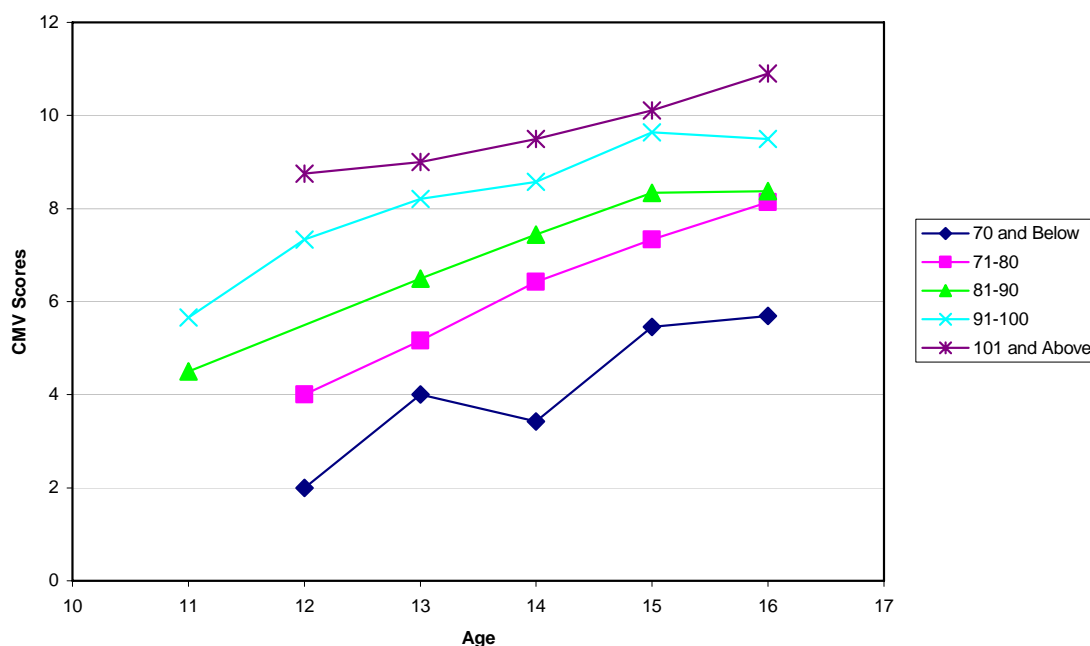


Figure 4. 1970s *CMV* Scores by Age and IQ  
(Ages 11 through 16)



As expected, verbal IQ was the strongest predictor of *Miranda* comprehension. Significant relationships were seen between verbal IQ and all three measures of *Miranda* comprehension (*CMR-II*, *CMR-R-II*, and *CMV-II*) using correlation, partial correlation, and regression analyses. Results were consistent in analyses using youth ages 13 through 19 and with only those youth ages 13 through 16 (to parallel Grisso's analyses). Youth with verbal IQ scores between 71 and 80 scored significantly lower on the *CMR-II* and *CMV-II* than did youth with verbal IQ scores of 81 and above. Youth with verbal IQ scores below 70 scored significantly lower than all other youth on both measures. Across all ages, less than half of youth scoring between 71 and 80, and less than one-fourth of youth scoring below 70, achieved "adequate" levels of understanding on all prongs of the *CMR-II*. Across all ages, less than half of participants at each IQ level exhibited "adequate" understanding of all 6 *Miranda* vocabulary words. Across IQ levels, the

portion of participants with “adequate” understanding of all six words ranged from 4% of those with verbal IQ scores below 70, to 44% of those obtaining verbal IQ scores above 101.

Examining data from youth 16 years of age and younger, a 3 (number of arrests: 1, 2, 3 or more) x 4 (number of previous DHS detentions: 0, 1, 2, 3 or more) MANOVA was conducted to evaluate the relationship between previous experience with the police and *Miranda* comprehension. Results revealed that *CMR-II* scores were significantly associated with the number of times a youth had been arrested, but they did not appear to be significantly associated with the number of previous detentions (Times arrested:  $F(2, 76) = 4.13, p = .020$ ; Previous detentions:  $F(3, 76) = 1.68, p = .178$ ). Although a significant relationship was observed, results clearly do not support the assumption that increased exposure to the police yields better *Miranda* comprehension. Youth with only one previous arrest received a mean *CMR-II* score of 5.7 ( $SD=1.8$ ), whereas youth with two prior arrests received a mean score of 5.0 ( $SD=2.4$ ), and those with three or more previous arrests received a mean score of 5.8 ( $SD=1.7$ ).

Scores on the *CMV-II* were not significantly associated with the number of times arrested ( $F(2, 76) = 1.76, p = .756$ ) or the number of previous detentions ( $F(3, 76) = .474, p = .702$ ). Using a 3 (number of arrests: 1, 2, 3 or more) x 4 (number of previous DHS detentions: 0, 1, 2, 3 or more) x 5 (ethnicity: Asian, Black or African-American, White, Hispanic or Latino, Other) MANOVA, ethnicity was examined as a potential moderator of the relationship between previous experience and *Miranda* comprehension. Results revealed that neither scores on the *CMR-II* nor *CMV-II* were significantly associated with



ethnicity (*CMR-II*:  $F(4, 60) = .883, p = .480$ ; *CMV-II*:  $F(4, 60) = .395, p = .811$ )<sup>9</sup>, nor the interactions between ethnicity and the variables measuring experience with the legal system (Previous detentions x ethnicity: *CMR-II*:  $F(8, 60) = .997, p = .448$ , *CMV-II*:  $F(8, 60) = 1.31, p = .255$ ; Number of arrests x ethnicity: *CMR-II*:  $F(4, 60) = .861, p = .493$ ; *CMV-II*:  $F(4, 60) = .309, p = .871$ ).

Similar results were found using a 3 (number of arrests: 1, 2, 3 or more) x 4 (number of previous DHS detentions: 0, 1, 2, 3 or more) x 2 (ethnicity: Black or African-American, White) MANOVA, an analysis designed to parallel the analyses used in the 1970s study. Again, neither number of previous detentions (*CMR-II*:  $F(3, 50) = .501, p = .683$ ; *CMV-II*:  $F(3, 50) = 1.16, p = .334$ ), number of arrests (*CMR-II*:  $F(2, 50) = .391, p = .679$ ; *CMV-II*:  $F(2, 50) = .188, p = .829$ ), ethnicity (*CMR-II*:  $F(1, 50) = .223, p = .639$ ; *CMV-II*:  $F(1, 50) = .447, p = .507$ ), nor the interactions between ethnicity and the legal experience variables (Previous detentions x ethnicity: *CMR-II*:  $F(2, 50) = .284, p = .754$ ; *CMV-II*:  $F(2, 50) = 1.03, p = .364$ ; Number of arrests x ethnicity: *CMR-II*:  $F(1, 50) = .564, p = .456$ ; *CMV-II*:  $F(1, 50) = .080, p = .778$ ) related significantly to either *CMR-II* or *CMV-II* scores.

### 4.3 Primary Hypotheses: Descriptive

Because of the limited descriptive information reported from the 1970s study, only youth 16 years of age and younger were included in our descriptive analyses. We expected that when youth in the 21<sup>st</sup> century sample misunderstood aspects of the *Miranda* warning, they would make errors similar to those of their counterparts in the

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<sup>9</sup> When all participants (youth 19 years of age and younger) were included in the MANCOVA similar results were obtained. Scores on the *CMR-II* and *CMV-II* were not significantly associated with the number of previous arrests, number of previous DHS detentions, ethnicity, nor the interactions between ethnicity and the variables measuring experience with the legal system.

1970s. Thus, on the *CMR-II*, we expected that youth would misinterpret the first prong of the *Miranda* warning (right to silence) as a statement that one must be silent. The expected pattern of errors was seen in youths' responses on the *CMR-II*. Youth who received inadequate or questionable scores on this question most often misinterpreted the warning as a statement to be quiet, frequently believing that it meant that a suspect must be quiet and not talk. See Table 14 for categories of misunderstanding and sample responses.

When the second prong of the *Miranda* warning (statements will be used in court) was misunderstood in the 1970s, it was interpreted most often to mean that any lying or disobedience could result in negative consequences in court. Responses did not include the recognition that truthful statements that may be self-incriminating could also be used against the defendant in court. As expected, youth in the 21<sup>st</sup> century sample, with questionable or inadequate comprehension of the second prong of the *Miranda* warning, most often misinterpreted the statement to mean that their bad behaviors (e.g., lying, cursing) could be brought up in court and used as a basis for punishment. These youth did not express an understanding that truthful statements about the offense could also be used against them in court. The second most common, and related, misunderstanding was the recognition that information could be repeated in court, but with no understanding that this information would be used in an adversarial process to incriminate the youth.

In the 1970s sample, when the third prong of the *Miranda* warning (right to an attorney before and during interrogations) was misunderstood, the time and place an attorney could be obtained was unclear or unspecified (even after querying from the

examiner). Youth in the 21<sup>st</sup> century sample who exhibited questionable or inadequate understanding of the third prong of the *Miranda* warning also tended to lack an understanding of when an attorney could be obtained. Even when asked by the examiner, “Does this sentence tell you a certain time when you can have a lawyer?” youth did not understand when a defendant could request an attorney. Youth tended to report that a lawyer could be requested before police interrogation *or* that a lawyer could be with them during interrogation; they did not express an understanding that a lawyer would be available to them at both time points. Many youth also misinterpreted the statement to mean that they would automatically have a lawyer with them in court, but made no reference to the interrogation situation.

Table 16

Categories of Misunderstandings and Sample Responses from the 1970s and 21<sup>st</sup> Century

Grisso’s 1970s Sample		21 <sup>st</sup> Century Sample	
Category of Misunderstanding	Sample Response	Category of Misunderstanding (Percentage of Total Sample making this error)	Sample Response
<i>CMR</i>			
1. Right to Silence			
You must be silent	“You have to remain silent”	One must be silent (26%)	“You got to be quiet”
----	----	One has the option of silence, without understanding that a right is protected (6%)	“You can, if you want, remain silent”
2. Statement will be used in Court			
Lying or disobedience can result in negative consequences	----	Negative behaviors can lead to trouble (18%)	“if you threaten or say anything crazy it can be brought back up”
----	----	Information will be	“If you say

3. Right to an attorney before and during questioning			repeated in court, without an understanding of incrimination (8%)	something they could give you a new charge”
The time and place an attorney can be obtained was unclear	----	----	One can meet with a lawyer before questioning (25%)	“You can have your lawyer with you before they question you”
	----	----	One can have a lawyer present during questioning (19%)	“I can have lawyer with me when I answer questions”

*CMV*

Interrogation				
A court hearing	---		Unable to give a definition (33%)	“Don’t know”
Unable to give a definition	---		A negative or violent confrontation or assault (13%)	“Harass” “Being terrorized” “to pressure”
Consult				
To converse, without the notion of assistance or advice		“To talk to”	To talk to, without the idea of aid or advice (22%)	“You want to say something to him”
	----	----	Unable to give a definition (22%)	“Don’t know”
Right				
Something one can do, without the understanding that a right is protected.		“It’s up to you, if you want to do it you can do it”	Something one can choose to do, without the understanding that a right is protected. (46%)	“An option if I want to do it” “You have the option, if you want”
	----	----	A privilege, without the understanding that the privilege is protected (5%)	“the privilege to do something”

*FRI*

RC-4. Why would Tim’s lawyer want to know exactly what he did?				
Lawyer is required		“so he can say it	To report information	“So he can say it to

<p>to report to the court any evidence of a client's responsibility (3/5)</p> <p>----</p>	<p>in court, because it's his job to tell the court that Tim did it, if he did the crime"</p> <p>----</p>	<p>to the court or judge (17%)</p>	<p>the judge to get him locked up"</p>
		<p>To see if Tim is guilty with no explanation of why the lawyer would want to know this (7%)</p>	<p>"want to know if he is guilty or innocent"</p>
<p>RS-5. Will Greg have to talk about what he did wrong in court?</p>			
<p>The judge has the power to force Greg to talk about the crime, with some indication that the judge can punish Greg if he does not.</p> <p>----</p>	<p>"If I'm in court, I have to tell the truth, the whole truth, and nothing but the truth. So when the judge asks you what you done, you got to tell him even if you don't want to."</p> <p>----</p>	<p>Greg must talk about what he did when in court, with no explanation of why, despite querying (27%)</p>	<p>"Yes"</p>
		<p>The judge has authority to make Greg talk about what he did (21%)</p>	<p>"Yes, he can't say no to a judge"</p>

*Note.* Grisso (1981) only reported the most common misunderstandings for these items. For consistency, the two most common misunderstandings in the 21<sup>st</sup> century sample are listed

In the 1970s sample, juveniles commonly misinterpreted Warning III on the *CMR-R*, believing that a social worker was synonymous with an attorney. Similarly, more than half of the youth in the 21<sup>st</sup> century sample interpreted the appointment of a

social worker as synonymous with the appointment of an attorney. Youth did not distinguish the difference in the roles played by these two categories of professionals.

On the *CMV*, youth in the 1970s sample either mistakenly defined “interrogation” as a court hearing or were unable to give a definition. Similarly, more than half of participants in the 21<sup>st</sup> century sample who exhibited questionable or inadequate understanding of the word “interrogation” were unable to give any definition of the word. Of those that gave a response, they most commonly defined interrogation as a negative situation in which an individual would be attacked (e.g., argument, assault, pressure, harassment), or as a meeting in which they would consult someone.

As in the 1970s study, 21<sup>st</sup> century youth most often misinterpreted the word “consult” as talking to someone, without the express purpose of seeking advice or input. The second most common misinterpretation was to define “consult” as “confront,” with little to no elaboration. The querying procedures for this item did not direct examiners to question this response; thus, it is unclear whether youth thought a consultation was an adversarial event, as a confrontation would be, or if the similarity in sounds between the two words led to their association.

On the *CMV*, “right,” was most often defined by youth in the 1970s sample as something one can do. Even with prompting by the examiner, the definition rarely included recognition that rights are protected. As expected, in the 21<sup>st</sup> century study, more than two-thirds of youth who exhibited questionable or inadequate understanding of the word, “right,” defined the word to mean something a person can do (e.g., permission, allowed), and the definition did not include the important concept of a right as a guaranteed protection.

For the 1970s sample, the most common misconceptions about the reasons lawyers seek the truth (item 9 on the Right to Counsel subscale of the *FRI*) were: that the lawyer must report all information to the court (most common), that the lawyer would not advocate for a guilty juvenile, and that the lawyer was similar to a judge and would decide guilt and/or punishment. As expected, youth in the 21<sup>st</sup> century sample who exhibited questionable or inadequate understanding of why lawyers seek the truth, stated that the lawyer wanted the information in order to report it to the court and/or judge. The second most common misunderstanding was that the lawyer would want to know whether or not the youth was guilty. Youth in the 21<sup>st</sup> century sample did not seem to think the lawyer would decide guilt and/or punishment, just that the lawyer would want to know this information about the client. Youth were unclear in their statements, even after querying, about why a lawyer would need such information, simply stating that the lawyer would want to know. It was generally unclear whether youth believed the lawyer needed the information to defend the client, to report the information directly to the court, to decide whether to take the case, or just for the sake of curiosity.

A majority of youth in the 1970s sample believed that a suspect must talk about an alleged offense if ordered to by the judge (item 15 on the Right to Silence subscale of the *FRI*). Almost half of the youth in the 21<sup>st</sup> century sample, and more than 90% of those exhibiting inadequate or questionable understanding of this item, reported that a suspect must talk about an offense if ordered to by the judge. Interestingly, half of the youth who could adequately define the right to silence on the first item of the *CMR-II* still reported that a suspect must talk about an alleged offense if ordered to by the judge.

## 5 DISCUSSION

Because we could not control for the differences between the two samples, it would be overreaching to provide a global interpretation of changes in *Miranda* comprehension over time. However, it is fair to report that the similarities in *Miranda* comprehension scores between the two samples suggest that *Miranda* comprehension has not notably improved over the past 30 years, as the courts, at times, have assumed.

Despite being slightly older and having more experience with the police, youth today exhibited similar to worse comprehension of the *Miranda* warning. The poorer comprehension exhibited in the 21<sup>st</sup> century study suggests that youth today may not understand the key vocabulary included in the warnings and may have misconceptions that interfere with their more general understanding of some prongs of the warning. As such, youth given the standard warning before interrogation may be in a position similar to, if not worse than, their counterparts in the 1970s when asked to make a knowing and intelligent waiver decision.

### 5.1 Comparing Testing Sites in the 21<sup>st</sup> Century Sample

#### 5.1.1 Confirmatory Findings

As expected, results indicated no major differences across the three testing centers that would prevent the analysis of the sample as a whole. Youth from the 2<sup>nd</sup> PA testing center were younger, due to recruitment timing. When controlling for age, youth from the three centers exhibited similar numbers of previous arrests, as well as comparable verbal IQ, *CMR-R-II*, *CMV-II*, and *FRI* scores. As hypothesized, we saw no gender differences in *Miranda* comprehension, allowing all analyses to be performed on a combined sample of male and female youths.



### 5.1.2 Differences Observed Across Testing Centers

Scores on the *CMR-II* varied significantly by site. These differences may be explained by the relatively small sample of youth gathered from one of the PA testing centers. Only 13 youth were tested at this location; therefore, individual scores could have had a great deal of influence on the site's mean and standard deviation. Because there were no consistent differences between centers, and because results did not differ at all between the two sites from which most of the sample was collected, differences appear to be resulting from the unwarranted influence of individual scores at one testing site with few subjects.

Ethnicity differences were also observed across centers. Participants from the two PA testing centers were more often members of minority groups. As a whole, compared with juvenile justice averages, the sample was somewhat over-represented by minority youth. Residential juvenile justice facility statistics from 1999 reported that 71% of youth in PA state facilities and 75% of youth in MA state facilities were from minority ethnic groups (Sickmund, 2004). In our sample, minority youth made up 82% of the total sample (90% PA, 65% MA). Nationally, black youth have the highest custody rates, and it is this group that was the single largest minority group within our sample (47%; 15% MA, 60% PA).

Significant differences in educational history were also observed across testing centers. More MA youth reported participating in special education services than did youth from PA, and these differences were not due to gender differences across testing centers. Although beyond the scope of this paper, it is hypothesized that these differences may be due to differing state and county policies, available resources, and funding for relevant services. No differences in IQ were observed across centers; thus,

the aptitudes of youth at each testing center were not so systematically different as to preclude collapsing data from the 21<sup>st</sup> century sample.

Finally, we observed unexpected differences in the number of previous detentions across testing centers. Youth from the MA post-adjudication center had the most previous detentions, followed by youth at the PA detention center, then by youth at the PA post-adjudication center. This finding is surprising and not completely understood. At all centers, only adjudicated youth participated. The differences observed may represent the individual differences of the youth at each center or they may reflect differences in state policies on which youth remain in detention, post-adjudication. Although differences in previous detentions were observed by testing center, it is important to note that no differences were seen in the number of previous arrests. For the current study, this is the more relevant demographic variable, as it is more indicative of the number of times the youth is likely to have been questioned and read the *Miranda* warning by police. As such, it is a better estimate of previous experience with police interrogation procedures. In addition, it is the variable that parallels Grisso's measure of legal experience.

## **5.2 Comparing Demographic Variables of the 1970s and 21<sup>st</sup> Century Samples**

Comparison of the 1970s and 21<sup>st</sup> century samples' key demographic variables revealed some potentially important differences between the two groups.

### **5.2.1 Age and IQ**

The 21<sup>st</sup> century sample was, on average, slightly younger. However, although significantly different, only a small effect size was observed; the average 21<sup>st</sup> century participant falls at the 58<sup>th</sup> percentile of the 1970s study.

Twenty-first century youth also had lower estimated IQ scores than their counterparts in the 1970s. This difference was, again, small, placing the average participant from the 21<sup>st</sup> century study at the 58<sup>th</sup> percentile of the 1970s study. Although only a small difference was observed between the two samples, it is important to note that the difference observed could be explained by ethnic differences between the two samples; on average, minority youth score lower on the Wechsler scales than do Caucasian youth (Fagan & Holland, 2002), and minority youth constituted the majority of the 21<sup>st</sup> century sample.

Alternatively, the observed IQ difference could have resulted from the use of different sub-tests to calculate an IQ score in the two samples. In the 1970s, two verbal sub-tests; (Vocabulary and Similarities) and one performance sub-test (Block Design) were given. In the 21<sup>st</sup> century study, only the two verbal subtests were used. As such, juveniles in the 21<sup>st</sup> century study with strong performance skills would not have had the opportunity to raise their overall scores with their performance scores. Research has shown that delinquent youth are more likely than the general population to obtain performance IQ scores higher than verbal IQ scores (Walsh, Petee & Beyer, 1987). Although this is a potentially plausible explanation for the observed IQ difference, it cannot be verified because the data from the 1970s study no longer exists and verbal IQ scores were never presented alone. Despite the potential problems in comparison, the verbal IQ estimates of youth in the 21<sup>st</sup> century study remain an important factor to consider, as verbal abilities are most relevant to *Miranda* comprehension (Goldstein, Condie, Kalbeitzer, Osman & Geier, 2003). Nonetheless, age and IQ differences

between the two samples are potentially important, and the *Miranda* comprehension comparisons must be interpreted in light of these differences.

### 5.2.2 Previous Experience with the Police

The most pronounced difference between the two samples was the number of previous arrests reported. This variable was gathered to represent the number of times youth had experienced police procedures and, most likely, heard the *Miranda* warning. Although a meaningful proxy of youths' interactions with police, and a factor noted within the "totality of circumstances" test, number of arrests is not synonymous with youths' interrogation experience. Direct information about youths' interrogation experience (frequency, duration, etc.) was not available for either sample and, thus, the proxy data was examined. Youth in the 21<sup>st</sup> century reported significantly more previous arrests than did 1970s youth. The large effect size of the difference indicates that the average 21<sup>st</sup> century participant would have been at the 97<sup>th</sup> percentile of the 1970s sample. This difference may or may not affect the comparability of the two samples.

Based on the differences seen between the two samples, if we apply the logic previously used by courts in the "totality of circumstances" test, we would expect 21<sup>st</sup> century youth to have better *Miranda* comprehension because of their greater experience with the legal system. However, results of the 1970s study did not support the relationship between prior experience and *Miranda* comprehension (Grisso, 1981), and such a relationship was not found with the modern sample. For this reason, it was assumed that the differences in number of previous arrests did not preclude the comparison of *Miranda* comprehension in the two samples.

### 5.3 Comparing Grisso's Original Instruments and the MRCI-II.

Results from the sub-sample of youth completing both Grisso's original instruments and the *MRCI-II* revealed no significant differences in scores on the two measures, despite minor differences in wording. Small effect sizes were found between the two measures, with youth scoring consistently higher on Grisso's; this was even the case on the *CMV*, a measure in which the items were identical to those on the *CMV-II*. Because completion of the *MRCI-II* was the priority (i.e., to generate norms), participants were administered Grisso's measure after completing the *MRCI-II* and other study measures. The slightly higher scores on Grisso's instrument may be the results of a practice effect from answering similar questions on the *MRCI-II* approximately 90 minutes prior.

### 5.4 Comparing *Miranda* Comprehension in the 1970s and Today

#### 5.4.1 Confirmatory CMR, CMR-R, and FRI Findings

As expected for youth ages 13 through 16, no differences were seen between the 1970s and 21<sup>st</sup> century samples on the *CMR*, *CMR-R*, and *FRI*, with sub-small effect sizes obtained. Youth today were no better at describing the meaning of the *Miranda* warnings nor at identifying whether sentences were semantically identical to the *Miranda* prongs. These findings are especially notable given that 21<sup>st</sup> century youth had many more previous arrests than 1970s youth. Consistent with Grisso's (1981) analysis, we also found that experience with the police was not associated with better comprehension.

#### 5.4.2 Differences on the CMV and the FRI for older youths

Contrary to expectations, youth ages 13 through 16, in the 21<sup>st</sup> century sample, scored significantly lower on the *CMV-II*; that is, they were less able to define key words from the *Miranda* warning than were youth in the 1970s. If the difference in IQ seen

between the two samples represents a true intelligence difference, this finding is not surprising. The structure of the *CMV* is nearly identical to that of the Vocabulary subtest of the *WISC-R* and *WASI*. Youth who performed well on the Vocabulary subtest are likely to perform well on the *CMV*. Although an understanding of the vocabulary involved would not be sufficient evidence to indicate *Miranda* comprehension, inadequate understanding of key vocabulary would prohibit adequate *Miranda* comprehension of the broader meaning of the warning. For example, if a youth does not know what an attorney is or does, he cannot understand or appreciate his right to an attorney.

Interestingly, although scores of youths ages 13 through 16 in the 21<sup>st</sup> century sample did not differ significantly from those of youth in the 1970s, youth ages 17 through 19 in the 21<sup>st</sup> century sample scored significantly lower than same aged youth in the 1970s. The observed effect size was large, indicating that today's older youth exhibited poorer comprehension of the nature of interrogation, right to silence, and right to counsel. This finding is notable because the *FRI* used in the 21<sup>st</sup> century study was identical to that used in the 1970s. Questions on this instrument tap the intelligent aspect of a *Miranda* waiver and assess appreciation of the key concepts of the role of police during interrogation, the continued right to silence in court, and the role of an attorney. *FRI* findings may indicate that youth today, at least of older ages, may have poorer abilities than their counterparts in the 1970s to make intelligent *Miranda* waiver decisions. However, the potential differences between youth ages 17 through 19 participating in the 1970s and 21<sup>st</sup> century studies prevent us from drawing definitive conclusions.

### 5.5 Examining Differences on Individual Items

Although no significant difference was observed between the total *CMR* scores of the 1970s and 21<sup>st</sup> century participants, comparison of individual items revealed some differences. Today's youth seemed to have poorer comprehension of the right to silence and the right to an appointed attorney (the first and fourth prongs of the warning). At the same time, youth today exhibited better understanding of the fact that statements would be used in court and the right to an attorney before and during questioning (the second and third prongs). Thus, although overall comprehension on the *CMR* was comparable between the two samples, there appear to be differences in which aspects of the warnings youth today comprehended. The finding that only 46% of the 21<sup>st</sup> century sample, as compared to 89% of the 1970s sample, adequately understood the right to silence is especially concerning, as understanding and appreciation of this right is fundamental to informed decision-making throughout interrogation and legal proceedings.

The same pattern was seen across prongs on the *CMR-R*. Youth today were better able to identify semantically identical sentences for the second and third prong of the warning, but made more errors than did their 1970s counterparts on the first and fourth prongs. This consistency of performance on the specific prompts suggests that findings on the *CMR* reflect a true lack of comprehension and are not due to youths' inability to verbally express the meaning of the warning.

As suggested by the significant difference in total *CMV* scores between the two samples, fewer 21<sup>st</sup> century youth provided "adequate" definitions for each and every *CMV* item. Today's youth demonstrated consistently poorer abilities to define the key vocabulary used in *Miranda* warnings, with the most marked differences were seen on the words "consult" and "entitled."

### 5.6 IQ, Age, Previous Experiences, and *Miranda* Comprehension

As expected, verbal IQ was consistently the strongest predictor of *Miranda* comprehension. These results are consistent with both the 1970s study and other recent research since (e.g., Colwell et al., 2005). The consistency in findings across time suggests that IQ may be the most reliable known predictor of *Miranda* comprehension.

The relationship between age and *Miranda* comprehension was not as clear with the 21<sup>st</sup> century sample as it appeared in Grisso's research (1981). The correlations observed between age and *Miranda* comprehension were substantially smaller than those found in the 1970s study, and the significant differences noted between age groups in the 1970s were not observed in the 21<sup>st</sup> century study, even when less-conservative analyses were conducted. Our results suggest that age may no longer be a clear and reliable predictor of *Miranda* comprehension. These findings are contradictory to Grisso's 1970s findings, as well as more recent research conducted using his instruments. Viljoen and Roesch (2005) found that age was a significant predictor of *Miranda* comprehension in a sample of defendants ages 11 through 17. In their study, youth were grouped into three age categories (11-13, 14-15, and 16-17), and equal numbers of youth in each category were recruited. It is possible that varying numbers of youth in each age group of our 21<sup>st</sup> century study may have clouded real differences between the groups, although adequate power was observed for analyses comparing the age groups. It is important to note that both Grisso's (1981) study and the more recent Viljoen and Roesch (2005) study included participants ages 11 and 12. Graphs of the 1970s results (see Figure 2 and Figure 4) on the *CMR* and *CMV* show major differences between 11, 12, and 13 year-old participants. The relationship of age and *Miranda* comprehension may be different in the 21<sup>st</sup> century sample because the *Miranda* comprehension of 11 and 12 year olds is not



included. Youth of these ages were generally not housed in the MA or PA facilities from which participants were gathered. Further research is needed to clarify the relationship between age and *Miranda* comprehension. Nonetheless, this study suggests that it may no longer be possible to make simple inferences about *Miranda* comprehension based on a juvenile suspect's age. Additionally, it seems that youth of all ages, in the 21<sup>st</sup> century sample, have poorer *Miranda* comprehension than did their counterparts in the 1970s. As such, courts may be overestimating the abilities of juvenile suspects.

Ethnicity was not observed to moderate the relationship between previous experience with the police and *Miranda* comprehension in the 21<sup>st</sup> century sample. Regression analyses including five ethnic groups and analyses including only African-American and Caucasian participants [to parallel Grisso's (1981) analyses] both revealed no significant relationships between experience, ethnicity, and *Miranda* comprehension. It is important to note that the observed power for the interactions in both analyses were low, ranging from .15 to .5 for analyses involving all ethnic groups, and .07 to .18 for analyses including only African American and Caucasian participants. Thus, it is possible that there are still differences in how experience with the police affects *Miranda* comprehension for youths of different ethnic groups. Nonetheless, the relationship Grisso identified may have changed since the 1970s, as police departments have become more diverse and youth are more likely to be arrested and interrogated by officers with similar ethnic and cultural backgrounds.

### **5.7 Trends in Misunderstanding the *Miranda* Warning**

As predicted, the errors made in youths' understanding of the various *Miranda* prongs were similar in the 21<sup>st</sup> century and 1970s. Generally, youth, at both time points,

seemed to have a literal, simplistic understanding of the warnings and often did not exhibit an understanding of the broad meaning or context of the right. For example, most youth were familiar with the concept that bad behavior can result in punishment. They, then, applied this understanding to the second prong of the *Miranda* warning, missing the larger implication that polite, true statements they give to police can also be used against them in adversarial court proceedings.

Youth in both samples seemed to lack an understanding of key concepts fundamental to the *Miranda* warning. Many youth did not appreciate the protected and inalienable nature of rights. These misunderstandings could have critical implications for youth attempting to navigate the legal system. Even among youth who were adequately able to define the right to silence, more than half thought a judge could force them to tell what had happened. If this is the understanding with which youth are operating, they may not see any reason to remain silent during a long and stressful interrogation, if they are going to be forced to talk when they get to court. Twenty percent of youth in the 21<sup>st</sup> century sample reported that if the judge learned that the youth had refused to talk to the police, the youth would be punished.

These findings also highlight the importance of the distinction between “knowing” and “intelligent.” A youth may be able to provide a factual explanation of aspects of the *Miranda* warning, without being able to apply the right in context. As such, quick checks of *Miranda* comprehension, such as having the youth paraphrase each right, may actually overestimate youths’ comprehension. Youth also seemed to consistently misunderstand the role of an attorney.

Youth in both samples also seemed to lack an understanding of the unique role of an attorney. Many youth noted that the lawyer would want to know whether or not the youth had committed the crime, but most of these youth did not express an understanding that the lawyer was there to help. Again, this misunderstanding has critical implications for why youth may or may not invoke their *Miranda* rights. If a youth does not understand that a lawyer will be there to help and defend him, he is unlikely to ask for a lawyer during interrogation. From the youth's perspective, asking for a lawyer to be present simply increases the number of people questioning him.

## 6 LIMITATIONS

The current study is a comparison of the results of the 1970s study and the 21<sup>st</sup> century sample, in order to examine how juvenile offenders' comprehension of the *Miranda* warning has changed over three decades, a time during which readings of the *Miranda* warning have proliferated throughout U.S. media to become part of the national culture. Comparing two separate data sets gathered almost thirty years apart has inherent limitations. There are differences in the participants and measures that cannot be avoided; however, examination of these differences suggests that they are not so limiting as to preclude comparison. However, general limitations should be noted. The 21<sup>st</sup> century sample is likely to over-represent urban youth, as the majority of youth were gathered from centers located in urban areas. However, two of the three centers hold youth from both urban and rural surrounding areas. Information regarding the youths' home communities was not collected as part of the standard demographic form and, thus, remains unknown. *Miranda* comprehension scores have not been noted to vary by location, but this variable has not been explicitly explored. Results seem to be similar

across samples gathered in Massachusetts, Pennsylvania, and Texas (Grisso, 1981; Colwell et al, 2005).

Complex analyses of 21<sup>st</sup> century data were also somewhat limited by a sample size relatively smaller than that used in the 1970s study. Although this may have affected some analyses, adequate power was observed for the primary hypotheses comparing the two samples, and effect sizes were reported and evaluated in all analyses.

Finally, there are two important limitations to interpreting the *Miranda* comprehension scores seen in both the 1970s and 21<sup>st</sup> century samples. First, with both samples, the youths' comprehension of the *Miranda* warning was evaluated in an environment carefully constructed to be calm and friendly. This environment is very different than a typical police interrogation situation in which youth are under stress and generally not free to leave. As such, results of both studies most likely represent an over estimate of youths' abilities to comprehend the *Miranda* warning and must be interpreted as such. Although this may appear to be a potential limitation of the instruments, both versions of the instruments were designed with this testing situation in mind and are intended to produce maximum understanding and appreciation scores.

In addition to interpreting *Miranda* comprehension scores as maximum comprehension, it is equally important to consider *Miranda* comprehension scores as only one of several elements considered when evaluating youths' abilities to waive their rights. The *Miranda* ruling established that a waiver of rights must be knowing, intelligent and voluntary (*Miranda v. Arizona*, 1966). Scores on instruments such as the *Instruments for Assessing Understanding and Appreciation of Miranda Rights* (Grisso, 1998) and the *MRCI-II* provide information about a youth's knowledge of the warning

and understanding and appreciation of key aspects. This knowledge is necessary, but not sufficient, for an intelligent decision to waive one's rights. In considering whether a youth's decision is intelligent, the reasoning process employed by the youth must be considered. The *FRI* provides some information on a youth's understanding and ability to apply their *Miranda* rights in different relevant legal situations; however, it does not fully evaluate youths' reasoning. Although research has not found strong evidence of differences in youths' and adults' cognitive abilities (Cauffman & Steinberg 2000), research has shown that youth are significantly more likely than adults to make risky choices (Steinberg, 2005). Decision-making differences may be due to youths' psychosocial immaturity (Steinberg & Scott, 2003). Psychosocial factors relevant to understanding differences in decision-making include, "susceptibility to peer influence, attitudes toward and perceptions of risk, future orientation, and the capacity for self-management" (Steinberg & Scott, 2003, p.1012). Psychosocial maturity (in this case defined as responsibility, perspective, and temperance) has been shown to be a significant predictor of decision making (Cauffman & Steinberg, 2000). For this reason, it is important to consider a youth's cognitive abilities *and* psychosocial maturity in addition to *Miranda* comprehension. Although the measures of *Miranda* comprehension included in this study do not provide information on all elements required for a waiver of rights, they provide important information on what parts of the warning a youth knows and understands. This knowledge is an important foundation that will impact any decisions made by the youth, and, as such, is an important aspect to understand.

## 7 CONCLUSIONS

### 7.1 Continued Use of Grisso's Instruments

Results indicate that youth today do not seem to understand their *Miranda* rights any better than did youths in the 1970s. Concerns have been raised by the courts (e.g., *T.S.D. v. State*, 1999) regarding the use and admissibility of Grisso's original instruments because of potential improvements in *Miranda* comprehension. Contrary to these expectations, results indicate that youth today may have poorer comprehension of some aspects of the warning than did youths in the 1970s. As such, if performance of today's youth is compared to Grisso's norms, the average scoring youth would have scored in the lower percentiles of the 1970s. Thus, using the relative standard of comprehension (i.e., comparing a juvenile suspect's *Miranda* comprehension to that of other juvenile suspects) is problematic if the norms from the 1970s are used. When published, the updated version of Grisso's instruments, the *MRCI-II*, will provide much needed normative data on juvenile offenders in the 21<sup>st</sup> century. Further studies on the *Miranda* comprehension of adult offenders and community samples of youth will be needed to place the understanding of 21<sup>st</sup> century juvenile offenders with in a broader context to assess relative understanding of rights. Until such information is available, evaluating modern youth by such a relative standard is not advisable given the changes observed in some aspects of *Miranda* comprehension.

Although relative comparison is questionable, results of the 21<sup>st</sup> century study indicate that Grisso's original instruments continue to provide useful information about youths' understanding of the *Miranda* warning. Twenty-first century youth scored similarly on Grisso's original instruments and the updated *MRCI-II*. As such, the

instruments can continue to be used to evaluate youths' *Miranda* comprehension until the *MRCI-II* is published with the updated measures and norms.

### **7.2 Implications for the “Totality of Circumstances”**

Confirming results from the 1970s study, 21<sup>st</sup> century findings indicated that there continues to be no simple relationship between previous experience with the police and *Miranda* comprehension. For this reason, we suggest that factors, such as previous number of arrests and detentions should not be considered within the “totality of circumstances.” IQ, however, remained the strongest predictor of *Miranda* comprehension. With the consistency of this finding across studies, we strongly recommend that youths' IQ scores be given notable weight when evaluating *Miranda* comprehension. In the 21<sup>st</sup> century study it was IQ, not age, which seemed to distinguish different groups of participants. These findings contradict results from the 1970s study, as well as other previous research, and require further exploration. Regardless, these results suggest that age may not be as strongly indicative of *Miranda* comprehension as previously assumed; as such, age, potentially, should play a more limited role in the “totality of circumstances” considered by judges when determining the validity of a *Miranda* waiver and admissibility of a confession.

### **7.3 Legal Implications**

Given the proportion of youth who exhibit difficulty with the more easily measured aspect of “knowing,” a *per se* approach providing legal counsel to all youth in interrogations has been suggested (e.g., Grisso, 1980; Owen-Kostelnick, Reppucci & Meyer, 2006). Other approaches have required a parental advocate, but do not seem to provide their intended protective function (Grisso, 1981; Grisso & Ring, 1979). A

lawyer, however, could provide the youth with relevant legal knowledge and advice during an interrogation situation. Recent research indicates that for pre-trial youth, time spent with their attorney is predictive of *Miranda* comprehension and legal capacities (Viljoen & Roesch, 2005). This relationship was even stronger for youth with lower IQ scores (Viljoen & Roesch, 2005). The counsel and presence of a lawyer during interrogation could protect the rights of youth and help compensate for their immature reasoning and deficient knowledge.

Such a *per se* approach may be rejected by policy makers and criticized by police, for whom the primary purpose of an interrogation is to solve crimes (Goldstein et al., 2003). Furthermore, there are serious financial implications to requiring lawyers' time to participate in interrogations with youth. Ultimately, the question remains for policy and legal decision makers about what levels of protection and understanding are required for and of youth. As Owen-Kostelnick, Reppucci, and Meyer (2006) noted, the U.S. legal system's treatment of juveniles depends on the youth's role. Although many civil policies recognize the immaturity of youths' judgment and seek to protect youth from their own limited abilities, the same juvenile is viewed very differently after he or she has committed a crime. A juvenile may be unable to drive a car, purchase cigarettes, or consent to medical procedures. However, he is expected to make a knowing and intelligent decision about waiving his rights during interrogation. This is a discrepant view of juveniles that may be related to public perceptions that youth are the perpetrators of serious crimes that must be deterred and punished for their actions (Owens-Kostelnick, Reppucci & Meyer, 2006). Despite these public perceptions, current policies require due process protections for defendants and uphold the constitutional bases of these



protections. A *per se* approach providing legal counsel to all youth would allow the intended protections of these policies to be in place for youth in interrogations. The numbers of post-adjudication youth who exhibited inadequate understanding of their rights in the 21<sup>st</sup> century study suggest that the legal system may be overestimating youths' abilities. Our current system may, "create an unacceptable risk that a child who does not understand his or her *Miranda* rights or the relevant circumstances will be found to have made a knowing, intelligent, and voluntary waiver nonetheless" (King, 2006, p.477). With what is now several decades of consistent research on the limited abilities of youth to make an informed and reasoned waiver decision, a *per se* approach requiring legal counsel for youth in interrogation situations may be indicated. Such protection is particularly important for youths with lower IQ scores, as research has consistently shown a relationship between IQ and *Miranda* comprehension. Although IQ can not be determined as easily as age or other factors considered within the "totality of circumstances," it is possible that abbreviated measures of IQ could be utilized to quickly identify the youth most in need of protection and automatically provide such youth with a lawyer before and during interrogation.

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