

A COMPARISON OF MIRANDA PROCEDURES: THE EFFECTS OF ORAL AND
WRITTEN ADMINISTRATIONS ON MIRANDA COMPREHENSION

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Millions of custodial suspects waive their rights each year without the benefit of legal counsel. The question posed to psychologists in disputed Miranda waivers is whether this waiver decision was, knowing, intelligent, and voluntary. Mental health professionals must be aware of potential barriers to Miranda comprehension to provide expert opinions regarding a defendant's competency to waive rights. The current study examined how Miranda warning reading level, length, and method of administration affects Miranda comprehension. Recently arrested detainees at Grayson County Jail were administered oral and written Miranda warnings from the Miranda Statements Scale (MSS; Rogers, 2005) to measure their comprehension of the warnings. Surprisingly low levels of Miranda comprehension were found for most warnings. For all warnings at or above 8th grade, a substantial minority (27.1% - 39.6%) of defendants exhibited failed (i.e., < 50% understanding) Miranda comprehension. Regardless of other variables, oral administrations resulted in a substantially larger number of defendants with failed Miranda comprehension. Implications for public policy and clinical practice are discussed.

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CHAPTER 1

INTRODUCTION

According to the Fifth Amendment of the United States Constitution, no person “shall be compelled in any criminal case to be a witness against himself” (U.S. Constitution). This safeguard provides custodial suspects with the unconditional right to remain silent during legal proceedings. As discussed in subsequent sections, further protection of suspects’ Constitutional rights has been the focus of several Supreme Court decisions throughout recent decades. Under current standards, custodial suspects must be advised of their legal rights and provide a knowing, intelligent, and voluntary waiver of those rights prior to custodial interrogations by law enforcement. The Supreme Court emphasized that these now famous Miranda procedures are critical safeguards for protecting the rights of the accused. Because confession evidence has detrimental implications to verdicts in a suspect’s prosecution, the importance of the Fifth Amendment protections cannot be over-emphasized. The following sections discuss key issues regarding the development and application of procedural safeguards intended to ensure protection of this fundamental right.

History of Miranda

During the 1960s, the Supreme Court made several landmark decisions that provided further protection of criminal suspects’ Fifth and Sixth Amendment rights against the inherently coercive nature of interrogations. On this point, Chief

Justice Warren stated, “custodial interrogation exacts a heavy toll on individual liberty and trades on the weakness of individuals” (p. 455), which results in suspects relinquishing rights they may have invoked under less intense circumstances (*Miranda v. Arizona*, 1966). The Supreme Court concluded that the presence of legal representation for custodial suspects would decrease police coercion during interrogations. In *Escobedo v. Illinois* (1964), the Court held that police must allow criminal defendants to consult with legal counsel when the focus of the interrogation is directed at a specific suspect and intended to elicit a confession. To ensure compliance with this protection, the Supreme Court held that any confession elicited without permitting opportunity to consult with an attorney is not admissible at trial.

Following *Escobedo v. Illinois* (1964), courts in criminal cases still faced practical problems because most suspects were not aware of their Constitutional protections, and law enforcement officials were not required to advise them of their rights. It was the responsibility of suspects to invoke their rights, but suspects cannot be expected to make such decisions if they are not aware they have them. To ensure this privilege was known to all suspects, the Supreme Court ruled in *Miranda v. Arizona* (1966), that police must warn all suspects, “in clear and unequivocal terms” (p. 467), of their constitutional protections when taken into custody and prior to any questioning by the police.

The Court’s decision in *Miranda v. Arizona* (1966) required that any suspect “must be warned prior to any questioning that he has the right to remain

silent, that anything he says can be used against him in a court of law, that he has the right to the presence of an attorney, and that if he cannot afford an attorney one will be appointed for him prior to any questioning if he so desires” (p. 479). This landmark Miranda decision, therefore, outlined the information that must be conveyed to all custodial suspects in the now famous Miranda warnings. According to Rogers and Shuman’s (2005) analysis, five components must be communicated to suspects: (a) the right to silence, (b) that any statement will be used as evidence against them in court, (c) the right an attorney, (d) that an attorney will be appointed to represent indigent defendants, and (e) that these rights may be invoked at any time. All warnings must be administered in a way that is clearly understood by the defendant. Suspects may invoke these rights at any time during the legal proceedings, regardless of their initial decision to waive their rights and talk with police. The standards set forth by Miranda were intended to guarantee the protected choice of silence and the availability of legal expertise at all stages of custodial proceedings.

Suspects are typically asked to waive their Constitutional protections after they are informed of them. For valid waivers, law enforcement officers may only proceed with custodial interrogations after defendants are made aware of their rights and clearly indicated their decision to waive Constitutional protections. Thus, *Miranda v. Arizona* (1966) required not just a cursory advisement of suspects’ rights, but stipulated that suspects may not be interrogated until they have waived their rights. The Court specified that any such waiver is considered

valid only if a suspect provides it knowingly, intelligently, and voluntarily. When defendants waive their Miranda rights and later claim the waiver was invalid, courts are obliged to determine whether such waivers are valid. In the case of a disputed waiver and subsequent confession, the burden is on the government to provide evidence that the defendant validly waived the rights (*Miranda v. Arizona*).

Validity of Miranda Waivers

The Supreme Court decisions have held consistently that a valid Miranda waiver must be made *knowingly, intelligently, and voluntarily* (*Godinez v. Moran*, 1993; *Iowa v. Tovar*, 2004; *Miranda v. Arizona*, 1966; *Moran v. Burbine*, 1986). They have been less clear, however, in the precise meaning of these three essential criteria for establishing a valid waiver of rights (Rogers & Shuman, 2005). Accordingly, no bright-line standard is available for determining the minimum capacities required for defendants to waive their Miranda rights knowingly, intelligently, and voluntarily. In the cases presented in the following paragraphs, appellate courts have elaborated on the meaning of these three prongs. From a clinical perspective, forensic experts have attempted to operationalized these appellate decisions and provide general guidelines for evaluating knowing, intelligent, and voluntary Miranda waivers.

In *Moran v. Burbine* (1986), the Court addressed the requirements of a knowing Miranda waiver in the following language: “The waiver must have been made with full awareness of both the nature of the right being abandoned and the

consequences of the decision to abandon it (p. 421).” According to this case, suspects must have only a basic understanding of their legal rights as well as the consequences that accompany a suspect’s waiver decision. The knowing inquiry was addressed more recently in *Godinez v. Moran* (1993) as “...whether the defendant actually *does* understand the significance and consequences of a particular decision” (p. 401, emphasis added). As a result of *Godinez v. Moran*, the knowing prong of a valid Miranda waiver also involves the ability to appreciate the significance of the decision to waive Miranda rights.

In determining whether a waiver is “knowing,” defendants must be able to articulate what rights and protections they are relinquishing (Melton, Pettila, Poythress, & Slobogin, 2007). According to Melton and colleagues, do defendants understand they are “giving up” something entitled to them? In contrast to this conceptualization, Grisso (2003) emphasized that a knowing Miranda waiver requires a general understanding of the rights as conveyed in the Miranda warnings. According to Grisso’s framework, knowing waivers require that suspects have basic understanding of both the language (i.e., vocabulary and phrases) used in the warnings and the legal rights that the warnings are intended to convey.

Using the framework of these appellate court decisions, other experts have elaborated on the criteria for knowing waivers. For example, Rogers and Shuman (2005) outlined three facets of understanding necessary for knowing waivers. They conceptualized that a knowing waiver is made when suspects

understand the basic components of (a) the Miranda warnings, (b) their corresponding rights, and (c) the waiver as it pertains to their case. According to their analysis, defendants must have some general understanding of legal rules and procedures relevant to their investigation and prosecution. In addition, defendants must be knowledgeable regarding how a waiver of rights will affect the conduct of their prosecution. The first two capacities parallel Grisso's (2003) framework for knowing Miranda waivers. However, Rogers and Shuman assert that suspects also must understand how a waiver of rights applies to their own individual cases.

The Court has been unclear in distinguishing between the knowing and intelligent prongs of valid Miranda waivers (Rogers & Shuman, 2005). According to Greenfield and Witt (2005), the knowing requirement of a valid waiver pertains to the concrete, factual aspects of comprehension. Under this conceptualization, the only requirement for knowing Miranda waivers is whether defendants grasp the basic fact that they are entitled to silence and legal counsel. In contrast, Greenfield and Witt explained that intelligent Miranda waivers are more complex. Specifically, an intelligent waiver relies on whether a defendant (a) realizes the adversarial nature of legal procedures, and (b) understands the implications of the decision to provide a statement. Similarly, Grisso (2003, p. 152) asserted that defendants must "grasp the significance" of their waiver decisions in order to satisfy the intelligent prong of Miranda. In contrast to this differentiation, in *People v. Bernasco* (1990) the Supreme Court of Illinois held that a Miranda

waiver was both knowing and intelligent if the defendant has a basic understanding of the words used to convey the Miranda rights. According to *People v. Bernasco*, the validity of Miranda waivers is not predicated on a defendant's "ability to understand far-reaching legal and strategic effects of waiving one's rights" (p. 964). By this formulation, a waiver of rights is valid if suspects simply knew they could remain silent and request a lawyer, regardless of whether they knew the consequences of waiving these rights.

As a basic requirement for valid waivers, the Supreme Court noted that knowledge is "the threshold requirement for an intelligent decision" (*Miranda v. Arizona*, 1966, p. 468). The intelligent prong was recently addressed in *Iowa v. Tovar* (2004) where the Court ruled that a waiver of counsel was not intelligent because the defendant was not aware of the danger and disadvantages of self-representation. Citing an earlier court case (*Bradley v. United States*, 1970, p. 748), they emphasized that intelligent waivers require "sufficient awareness of the relevant circumstances" in order to ensure the defendant "knows what he is doing and his choice is made with eyes open" (*Iowa v. Tovar*, p. 1387).

From a clinical perspective, Melton and colleagues (2007) argued that a key element of the intelligent prong is whether a waiver of rights was the product of a rational reasoning process. However, they did not provide any further specification of what is required for rational reasoning. Using different terms, Rogers and Shuman (2005) explained that intelligent waivers require three closely related decisional capacities: (a) identification of alternatives, (b)

understanding the consequences of each alternative, and (c) application of reasoning to their waiver decisions taking into account case-specific circumstances. According to their model of intelligent Miranda waivers, suspects cannot provide a valid waiver of rights if they are unable to process information and weigh immediate and long-term consequences as they pertain to their legal circumstances.

Based on his review of appellate cases, Grisso (2003) has operationalized an intelligent waiver as a decision making capacity that requires defendants to have more than just a basic grasp of the warnings. To understand the intended function of these rights, he emphasized suspects must have accurate perceptions about the legal system regarding three pertinent aspects: the adversarial nature of police procedures, the potential value of attorney consultation, and the Constitutional protections against self-incrimination (Grisso).

The final prong for a valid Miranda waiver involves whether defendants waived their rights voluntarily. In tracing its development, the early Supreme Court ruling in *Brown v. Mississippi* (1936) prohibited only the use of physical brutality as a basis for involuntary confessions. The Court later expanded the voluntary prong in *Moran v. Burbine* (1986), by broadly addressing psychological coercion. In *Moran v. Burbine*, the Court held that Miranda waivers are not considered voluntary if they result from intimidation, coercion, or deception. In the same year, the Court in *Colorado v. Connelly* (1986) narrowed the standard for

voluntary Miranda waivers. With respect to psychological coercion, *Connelly* excluded involuntariness resulting from internal pressure, such as command hallucinations. This case clarified that internal coercion (e.g., psychotic symptoms) by itself was not sufficient to result in inadmissible confessions. Based on the *Connelly* ruling, Rogers and Shuman (2005) conceptualized two aspects of a voluntary waiver: (a) the totality of circumstances must be considered, and (b) if police coercion played a role in the totality of circumstances. Therefore, a defendant's diminished capacities are considered only in the context of the totality of circumstances. Because mental health professionals are not typically asked to evaluate voluntary Miranda waivers, no other experts have elaborated on specific factors with respect to this prong.

In summary, Courts typically consider Miranda waivers knowing and intelligent if at the time of the waiver, suspects adequately understand the meaning of the rights and how they apply to their case circumstances (Rogers & Shuman, 2005). A knowing and intelligent Miranda waiver requires the court to consider factors including the suspect's abilities, contextual factors, and, "whether he has the capacity to understand the warnings given to him, the nature of his Fifth Amendment rights, and the consequences of waiving those rights" (*Fare v. Michael*, 1979, p. 725). As a result of *Moran v. Burbine* (1986), a waiver is generally considered voluntary if the suspect provided the confession statement without the external influence of police coercion.

The *totality of circumstances* approach is utilized by the courts to evaluate whether a Miranda waiver is valid (*Dickerson v. U.S.*, 2000; *Fare v. Michael C.*, 1979; *Miranda v. Arizona*, 1966). Courts must determine whether the waiver was knowing, intelligent, and voluntary based on consideration of the individual circumstances surrounding a particular case. The totality of circumstances test precludes the use of any single fact, characteristic of the defendant, or circumstance (i.e., *pro se* approach), as sufficient evidence by itself to cause an invalid waiver (Frumkin, 2000). In accordance with case law, “only if the totality of circumstances surrounding the interrogation reveals both an uncoerced choice and the required level of comprehension may the court conclude that the Miranda rights have been waived” (*Moran v. Burbine*, 1986, p. 76). According to Grisso (2003), the totality approach requires consideration of two different domains when determining the validity of a Miranda waiver: (a) the suspect’s abilities and (b) the context in which the waiver was obtained. The courts are not required to rely on specific characteristics within these two domains, and the weight given to any individual characteristic will likely vary by its relevance to a particular case.

The Court in *Coyote v. U.S.* (1967) listed factors that are generally considered relevant to determining whether a Miranda waiver is valid. These factors include background information, such as age, level of education, and previous experience with the legal system. Psychological characteristics of the defendant, including intelligence, poor language ability, illiteracy, and mental disorders are also routinely considered under the totality of circumstances

(Oberlander, 1998). Finally, the circumstances of the arrest should be examined, such the defendant's mental and physical state at arrest (e.g., intoxication) and police conduct.

Competency to Waive Miranda Rights Evaluations

The variability in legal standards creates a formidable challenge for developing any standardized protocol for assessing defendants' competency to waive Miranda rights (Rogers & Shuman, 2005). Validity of Miranda waivers are based on a case-specific evaluation of the "totality of circumstances" relating to interrogation. As previously referenced, case law and psycholegal experts describe several factors that are considered in the totality of circumstances approach to determining the validity of Miranda waivers. According to Grisso (2003), legal descriptions of the totality approach have focused on two general types of case factors: (a) characteristics of the defendant that potentially diminish or augment the capacity to make a knowing, intelligent, and voluntary waiver of Miranda rights, and (b) the situational demands in which the defendant made the statement. However, courts' have differed in their overall conclusions regarding the necessary degree of competence, and only limited empirical evidence is available concerning how courts weigh specific factors in the totality approach for determining the validity of Miranda waivers. As a result, few standardized assessment methods are available.

Due to the lack of published guidelines and specialized instruments available to forensic psychologists, researchers have made considerable

attempts at establishing guidelines for Miranda evaluations. Expert forensic practitioners, such as Melton et al. (2007) and Grisso (2003) provide broad theoretical models for competency to waive Miranda rights. Their models are helpful for interpreting Miranda-related court cases, and for conceptualizing this largely abstract construct of competence to waive Miranda rights. However, these broader models provide minimal information for actually conducting assessments regarding the validity of Miranda waivers.

In contrast, other forensic experts (Frumkin, 2000; Greenfield, Dougherty, Jackson, Podboy, & Zimmerman, 2000; Oberlander, Goldstein, & Goldstein, 2003; Rogers & Shuman, 2005) have developed pragmatic guidelines that provide useful practical information for conducting competency to waive rights evaluations. Miranda assessment models are similar in their broad content areas, but specific recommendations vary depending on the particular model. For example, Frumkin, and Rogers and Shuman provide specific recommendations regarding standardized and case-specific methods for evaluating the validity of Miranda warnings, yet they differ in their interpretative strategies and approaches for determining an examinee's overall capacity to make a knowing, intelligent, and voluntary waiver of rights. While Frumkin emphasizes evaluation and interpretation from a much broader perspective of overall psychological and cognitive functioning, Rogers and Shuman focus on a systematic evaluation of specific factors that are logically and empirically connected to the critical Miranda-related capacities necessary to provide a valid Miranda waiver.

Although these frameworks for Miranda waiver evaluations differ considerably in their detailed recommendations, one commonality is that a thorough Miranda waiver evaluation must include case-specific and standardized techniques that assess both cognitive and psychological domains of functioning (Frumkin, 2000; Grisso, 2003; Melton et al., 2007; Oberlander & Goldstein, 2001; Rogers & Shuman, 2005). The following paragraphs discuss these domains of functioning and methods of assessment in further detail.

Cognitive Abilities

Intellectual functioning and academic achievement are two factors within the cognitive domain frequently cited as essential to Miranda waiver evaluations. As discussed later, research has clearly illustrated that individuals with overall intellectual impairments are less likely to comprehend Miranda warnings (e.g., Everington & Fulero, 1999; Fulero & Everington, 1995). Therefore, all Miranda assessment models include an evaluation of overall intelligence.

While a defendant's overall intelligence is one critical factor that should be considered, Rogers and Shuman (2005) cautioned that focusing on overall intelligence is potentially misleading because deficits in verbal abilities may be masked by comparatively strong nonverbal capacities. In contrast to most other forensic experts, they emphasized a broad range of cognitive skills as particularly relevant to Miranda-related abilities. They include verbal IQ, vocabulary skills, verbal reasoning skills, and comprehension of oral and written information.

Psychological Functioning

In addition to evaluating a defendant's cognitive abilities, forensic experts (Frumkin, 2000; Grisso, 2003; Oberlander & Goldstein, 2001; Oberlander et al., 2003; Rogers & Shuman, 2005) consider the effects of mental disorders on Miranda comprehension. Rogers and Shuman explained that Axis I symptomatology, such as psychotic episodes may significantly impede defendants' capacities to waive their Miranda rights intelligently. For example, they noted that defendants with paranoid delusions may misunderstand the confession-eliciting nature of the interrogative relationship.

Several studies (Rogers, Harrison, Hazelwood, & Sewell, 2007; Vilijoen, Roesch, & Zapf, 2000; Cooper & Zapf, 2008) found that psychological deficits can be detrimental to Miranda comprehension. For example, Vilijoen and colleagues found that defendants with psychotic disorders exhibited higher levels of impaired overall legal abilities when compared to defendants without psychotic symptoms. More recently, Rogers and colleagues evaluated Miranda comprehension with mentally disordered criminal defendants from an inpatient competency restoration unit. They found that only 36.4% of disordered individuals demonstrated a basic grasp for even the simplest Miranda warnings (i.e., a sixth grade reading level). Together, these research findings illustrate the importance of examining the presence and severity of psychological disorders in the context of Miranda waiver evaluations.

Case-Specific Methods

Rogers and Shuman (2005) explained that forensic clinicians must rely heavily on case-specific methods due to the invalidity of specialized measures. The overarching goal in all Miranda waiver evaluations is to gather relevant information on the defendant's understanding of legal rights at the time Miranda was administered. Thus, a critical aspect is the retrospective nature of Miranda evaluations, which requires awareness of situational factors that may have impaired comprehension at the time of the arrest (Frumkin, 2000; Grisso, 2003; Melton et al., 2007; Rogers & Shuman). Rogers and Shuman provided case-specific techniques that parallel the aforementioned core clinical issues assessed in Miranda evaluations. Case-specific techniques are particularly valuable for gaining an understanding of how defendants apply Miranda in the context of their legal situations, because they focus on a particular suspect, the applicable warning, and individual circumstances.

Specialized Measures of Miranda Comprehension

Specialized forensic instruments can be helpful for evaluating a defendant's Miranda-related functional abilities when used in combination with standardized cognitive and psychological tests (Greenfield et al., 2001). This evaluation of key functional abilities is especially complicated due the lack of validated instruments that measure a suspect's ability to comprehend Miranda and its implications (Rogers & Shuman, 2005).

Grisso's Miranda Instruments (GMI; Grisso, 1998) are currently the most widely used. He developed four instruments based on his conceptual framework of a knowing and intelligent Miranda waiver: Comprehension of Miranda Rights (CMR), Comprehension of Miranda Rights – Recognition (CMR-R), Comprehension of Miranda Vocabulary (CMV), and Function of Rights in Interrogation (FRI). Three instruments assess the ability to understand the rights presented in the Miranda warnings. First, the CMR requires the individual to paraphrase components of Miranda warnings. Second, the CMR-R tests whether the defendant can recognize the original Miranda warning wording. Finally, the CMV requires individuals to define six critical words used in Miranda warnings. The fourth instrument (i.e., FRI) assesses three areas involved in Miranda reasoning: (a) jeopardy associated with interrogation, (b) purpose of legal counsel, and (c) safeguards under the right to silence.

The GMIs have received mixed reviews ranging from positive (Oberlander et al., 2003; Frumkin, 2000) to decidedly negative (Rogers, Jordan, & Harrison, 2004). Clinicians should be aware of the GMI limitations regarding reliability and validity. Grisso originally developed the GMIs as research measures used exclusively with juveniles. Therefore, the psychometric data presented in the instrument's manual (Grisso, 1998) are based mostly on normative juvenile data collected in the late 1970s (Grisso, 1981). While commonly used with adults, adequate normative data have yet to be collected for adult populations. As an additional limitation, these measures are based on the outdated version of a

Miranda warning used in St. Louis County, Missouri. Miranda warnings vary significantly across jurisdictions and it is unknown whether the warning used in Grisso's instrument is similar to versions used in other jurisdictions.

Grisso's measures are valuable as research tools, but major improvements in reliability and validity are necessary to increase their effectiveness for forensic practice (Rogers, et al., 2004). Clinically, Rogers and Shuman (2005) suggest using the measures exclusively as behavioral observations while avoiding any interpretation based on normative comparisons or quantified score. Researchers continue their attempts to empirically develop and validate additional specialized Miranda measures. For example, Rogers (2005, 2006a, 2006b) developed three research measures to assess Miranda comprehension. Rogers' instruments, which are described below, assess three critical aspects of knowing and intelligent waivers, including factual understanding of rights, comprehension of legal terminology, and ability to make rational legal decisions. Although further research is needed to confirm psychometric properties, initial reliability and validity estimates are promising.

The Miranda Statements Scale (MSS; Rogers, 2005) is a recently developed research measure for evaluating the knowing prong of Miranda waivers. As described in detail in the methods section, the MSS evaluates Miranda comprehension by assessing the defendant's ability to paraphrase Miranda warnings in their own words. While this method is similar to Grisso's

(1998) CMR, a major strength of the MSS is its inclusion of prototypical Miranda warnings representative of U.S. jurisdictions.

The second measure related to the knowing prong is the Miranda Vocabulary Scale (MVS; Rogers, 2006b). The MVS assess the defendant's contextual understanding of legal terminology used in representative Miranda warnings. The remaining research measure, the Miranda Reasoning Scale (MRS, Rogers, 2006a) examines factors related to the intelligent prong of Miranda waivers. The MRS was developed as a test of a defendant's ability to reason about the implications of both waiving and asserting legal rights.

Comprehension of Miranda Warnings

Comprehension of Miranda rights is a necessary prerequisite for knowing and intelligent waivers. In order to provide a valid waiver of Miranda rights, suspects must have a basic understanding of their legal rights as the basis of deciding whether to relinquish those rights. Without a general understanding of Miranda warnings, suspects cannot knowingly waive their rights. If challenged, their statements would not likely be admissible at trial.

A myriad of cognitive (Everington & Fulero, 1999; Grisso, 1998), psychological (Cooper & Zapf, 2008; Rogers, Harrison, Hazelwood et al., 2007), and contextual factors (Grisso, 2003; Gudjonsson, 2003) can impede criminal defendants' ability to comprehend their Miranda rights and provide a knowing, intelligent, and voluntary waiver of those rights under the totality of circumstances test. Thus, a potentially large number of defendants are at risk for waiving their

legal rights without an adequate level of understanding. On this point, Rogers (2008) estimated that 318,000 criminal defendants waive their rights without understanding even half of the information communicated in Miranda warnings. Furthermore, Rogers and Shuman (2005) concluded that the capacity to waive Miranda rights exceeds all pretrial mental health issues. For this reason, it is important to further explore Miranda warnings and factors that present barriers to Miranda comprehension in the following sections.

Cross-Jurisdictional Variations in Miranda Warnings

The Court ruled that custodial suspects must be clearly informed of their rights and the consequences of waiving them, but did not establish standard wording or method of administration for Miranda warnings (*Miranda v. Arizona*, 1966). Recently, the court affirmed that no magic words are required to satisfy Miranda (*Missouri v. Seibert*, 2004). The absence of such standardization allows jurisdictions to construct their own versions of the Miranda warning. As a result, the language and administration procedures used to convey Miranda components are highly variable across jurisdictions. The extent of these cross-jurisdictional variations was virtually unexplored until the last decade. In recent years, however, researchers have shed light on the magnitude of differences observed in versions of Miranda warnings and waivers currently used.

On the most basic level, the number of unique versions of Miranda warnings is remarkable. Greenfield, Dougherty, Jackson, Podbody, and Zimmerman (2001) were the first to examine variations in Miranda warnings. For

21 New Jersey counties, they found 16 (76.2%) unique versions. Expanding on Greenfield and colleagues' groundbreaking study, Helms (2003) analyzed 54 warnings from federal and state jurisdictions across the nation, and found 31 different versions for state jurisdictions alone. Most recently, Rogers and his colleagues (Rogers, Harrison, Shuman, Sewell, & Hazelwood, 2007; Rogers, Hazelwood, Harrison, Sewell, & Shuman, 2008) conducted two large-scale surveys of nationally representative Miranda warnings. In the first survey of 560 Miranda warnings, their analysis revealed 532 (i.e., 95.0% unique) distinct variations of Miranda warnings used in United States jurisdictions. The second survey (Rogers, Hazelwood, Harrison, et al., 2008) closely mirrored the percentages of unique variations from the first survey. For the 385 additional warnings, they found that 356 (92.5%) were unique.

A general assumption of most past Miranda-related research is that all Miranda warnings are essentially the same (Rogers, Shuman, & Drogin, 2008). For example, Grisso (1998) assumed that a single warning would generalize to other jurisdictions. Furthermore, forensic linguistic experts (Solan & Tiersma, 2005, pp. 74-75) have asserted that "in virtually all cases, what police officers say or read to suspects closely tracks the language of the Supreme Court's opinion" in *Miranda v. Arizona* (1966). Research findings, like those discussed above, suggest the opposite is true: the vast majority of Miranda warnings are unique in their wording. In light of this remarkable heterogeneity, researchers have further analyzed cross-jurisdictional differences in Miranda warnings for reading levels

(Greenfield et al., 2001; Helms, 2003; Kahn, Zapf, & Cooper, 2006; Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison et al., 2008), length (Rogers, Harrison, Shuman, et al.; Rogers, Hazelwood, Harrison, et al.), and content (Rogers, Harrison, Shuman, et al.; Rogers, Hazelwood, Harrison, et al.). The following two sections focus on variability in the latter two dimensions, specifically length and content.

Length of Miranda Warnings

Rogers (2008) conceptualized word length as the most basic metric for comparing Miranda warning versions. Even at this simple level of comparison, the range across Miranda warnings and waivers is remarkable. Rogers, Harrison, Shuman, et al. (2007) and Rogers, Hazelwood, Harrison, et al. (2008) conducted the only analysis of Miranda's length using nationally representative Miranda warnings.

In their original survey (Rogers, Harrison, Shuman, et al., 2007), the total for Miranda warnings and waivers ranged from 49 to 547 ($M = 146$) words. In a replication survey (Rogers, Hazelwood, Harrison, et al., 2008), they found the average for total Miranda warnings and waivers to be almost identical ($M = 148$ words). However, a considerably smaller range (55 to 374 words) was reported for warnings in the replication analysis. Excluding the waiver of rights, Rogers, Harrison, Shuman, and colleagues (2007) found that the number of words contained in the five Miranda warning components varied from 34 to 227 ($M = 92$) words. Rogers and his colleagues reported similar results from a second

study (Rogers, Hazelwood, Harrison, et al., 2008), with Miranda length ranging from 21 to 231 ($M = 99$) words.

Individual Miranda components are highly variable regarding length (Rogers, Harrison, Shuman, et al., 2007; Rogers, Harrison, Hazelwood, et al., 2008). For instance, the first component (i.e., the Constitutional right to silence) ranges from 4 to 43 words. The two surveys provided consistent evidence that the first two Miranda components are typically short (< 10 words), whereas the third, fourth, and fifth components contain an average of 20 to 25 words. As for the language contained in the Miranda waiver, Rogers and colleagues consistently found the largest range (4 to 184 words). Due to lengthy Miranda waivers, the overall length increases by an average of about 50 words when the Miranda waiver is included.

This astonishing variation in word length is directly relevant to Miranda comprehension. Commonsensically, a suspect's comprehension should deteriorate for long warnings (e.g., more than 200 words). However, Shuy (1997) argued that more concise warnings may omit important details from Miranda. He emphasized that succinct language frequently needs further clarification. As the length of warnings increase, however, defendants may become overwhelmed by lengthy sentences that increase the complexity of Miranda warnings (Kurzon, 2000). Considering these divergent views, research is needed to explore the effect of length on suspects' understanding of Miranda.

Content of Miranda Warnings

Miranda warning versions differ considerably in the content because of both their level of detail and efforts at clarification (Rogers, Harrison, Shuman, et al., 2007). As previously mentioned (Shuy, 1997), brief warnings may miss important details. If a warning simply states “you have the right to an attorney,” it can leave some suspects confused about the availability and duties of their attorneys. The Miranda ruling provides suspects with the right to legal counsel at anytime following their arrest. If not clearly stated in the Miranda warnings, suspects may inaccurately infer that their right to counsel applies only to the interrogation itself and not realize they have the right to speak privately with an attorney prior to any questioning. As noted by Godsey (2006), an attorney is expected to act as an ally to remind defendants of their rights (*Miranda v. Arizona*, 1966, p. 469). Thus, the Miranda decision anticipated that legal counsel would actively represent the suspect during the interrogation. However, versions of Miranda warnings differ in how they convey the attorney’s role. Two studies analyzed specific content of representative Miranda warnings, and found that 50.2% (Rogers Harrison, Shuman, et al., 2007) and 51.7% (Rogers, Hazelwood, Harrison, et al., 2008) simply stated defendants have the right to have an attorney “present.” In contrast, the rest of Miranda warnings actually advised defendants of their counsel’s duties, such as to “advise” or “consult.” As a further example, these studies found most of Miranda warnings do not specify that legal services for indigent defendants are provided without expense to the defendant.

Almost all Miranda warnings fall short of explaining two important consequences that arise from exercising Miranda rights. According to Rogers, Harrison, Shuman, and colleagues (2007), these omissions involve: (a) that the interrogation must end immediately when defendants invoke their rights, and (b) that defendants' silence or request for an attorney cannot be used against them. Very few warnings explain the practical advantage of exercising Miranda rights: that the interrogation must end immediately once suspects invoke their rights. According to nationally representative survey data, between 1.8% (Rogers, Harrison, Shuman, et al.) and 7.0% (Rogers, Hazelwood, Harrison, et al.) explain this advantage. Therefore, most criminal suspects are likely unaware of this consequence because this is not stated in the warnings. Without this explanation, suspects could make Miranda waiver decisions based on inaccurate information. Without a truly informed decision, suspects may acquiesce to law enforcement officers and provide potentially damaging statement simply to end the interrogation.

Miranda warnings fail to provide full Constitutional protection if suspects do not understand they their right to silence cannot be used as incriminating evidence. They may wrongly believe that invoking their rights could be used as evidence against them. In *Doyle v. Ohio* (1976), the Supreme Court ruled that a suspect's decision to remain silent could not be used at a future trial to infer guilt. However, virtually all warnings do not explain this critical safeguard of Miranda (Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al.,

2008). Combining data from both surveys, Rogers and his colleagues found only one version out of 945 different Miranda warnings communicated this critical Miranda knowledge. In light of this finding, it is questionable whether many warnings convey suspects' rights in "clear and unequivocal language" as required by the Court in *Miranda v. Arizona* (1966). As emphasized by Rogers and Shuman (2005), suspects that believe silence can be used as incriminating evidence do not have a correct understanding of this Constitutional protection, which safeguards their "right" to silence in the context of Miranda.

Vocabulary of Miranda Warnings

An understanding of Miranda vocabulary is the most fundamental prerequisite for Miranda comprehension (Rogers, Hazelwood, Sewell, et al., 2008). Defendants' capacity to accurately comprehend Miranda words may be compromised for two reasons. First, the complexity of the vocabulary included in Miranda warnings is highly variable across jurisdictions. In order to determine the grade level required for comprehension of Miranda vocabulary words, Rogers, Hazelwood, Sewell, and colleagues compiled and analyzed 726 unique words found in Miranda warnings across American jurisdictions. They found that the most frequently used words in Miranda warnings are understandable by most persons with at least a seventh grade education. Even for simple warnings, however, some legal terms may be included that require much higher educational levels to understand. For example, they found that the word "appointed" is frequently used in Miranda warnings to refer to an indigent

suspect's means of obtaining legal counsel, yet it is typically not understood by most persons with less than a college education. The second barrier regarding defendants' understanding of Miranda vocabulary is presented by words with multiple meanings. For example, the word "right" is easily understood by most individuals with very little education (i.e., fourth grade) when referring to a direction, but requires an eighth grade education when referring to suspects' legal privileges (Rogers, Hazelwood, Harrison, et al., 2008). A conceptual understanding of Miranda vocabulary does not occur unless defendants can define and comprehend these terms within the legal context.

The entire meaning of Miranda can be distorted if even a few words are misunderstood by defendants. On this point, Grisso (1981) found that two-thirds of adult probationers lacked adequate comprehension of one or more of six critical Miranda words. Notably, 60% failed to understand the word "interrogation." However, a surprising number (19.2%) did not have an accurate understanding of "right" as a legal term. Many criminal defendants, therefore, cannot achieve an accurate understanding of Miranda words and phrases, which is the most basic functional ability associated with Miranda comprehension (Grisso, 2003). Therefore, some jurisdictions have replaced difficult words like "interrogation" with "questioning" as an effort to make the warnings understandable for most suspects (Oberlander et al., 2003). Empirical evidence, however, has yet to be gathered about whether these intended improvements

are effective as a means of improving suspects' understanding of their legal rights.

Reading Levels of Miranda Warnings

Reading levels of Miranda warnings affect how successfully defendants can read and understand the information being communicated. Therefore, reading level is a critical issue especially when defendants are given written Miranda. Two related questions arise considering the complexity of the Miranda warning language in relationship to the defendant's abilities. First, what is the complexity of the language used to convey Miranda warnings? Second, how does the complexity compare to the capacities of most criminal defendants?

In response to the first question, previous research has relied on the widely used Flesch-Kincaid (Flesch, 1950) to estimate the level of reading skills required to comprehend Miranda warnings. Greenfield and colleagues (2001) were the first to examine reading levels of Miranda warnings from 21 counties in New Jersey. Even in this small-scale survey, they found remarkable variation in the warning's reading difficulty, ranging from fourth grade to third year of college (i.e., grade 15). Kahn, Cooper, and Zapf (2006) revealed similar results from an examination of within state variation for 47 Alabama counties. They reported a large range for Miranda warning reading levels (*M* grade 7.12; range 5.7-12.0), but their analysis revealed a high school education was sufficient for comprehension of the most difficult versions. While indicating a wide range of reading levels, findings of both studies are limited to a single state. However,

Helms (2003) expanded the seminal study by Greenfield and colleagues to include 54 Miranda warning versions used by state and federal law enforcement. His analysis revealed a somewhat smaller range in reading levels, with an average level of about seventh grade (i.e., grade 6.9). Consistent with Greenfield and colleagues, Miranda warnings with reading levels as low as fourth grade were reported. In contrast, Helms' findings suggested that the highest Flesch-Kincaid reading level was slightly below 10th grade (i.e., 9.9), substantially less than Greenfield and colleagues' college requirement.

More recently, Rogers and his colleagues (Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al., 2008) conducted two surveys examining the readability of nationally representative Miranda warnings. They consistently found that this large variation in reading difficulty (i.e., grades 2.8 to 18) is also prevalent for representative Miranda versions used across U.S. counties. Despite this remarkable range, more than two-thirds (69.6%) require sixth to eight grade reading levels to comprehend.

In summary, several studies of Miranda reading levels demonstrate that a wide range of abilities necessary to understand Miranda warning variations used across jurisdictions. Although the exact range of Miranda reading levels varies across studies, research findings consistently show the suspects typically need at least a seventh grade reading level for understanding.

The second critical question concerns the discrepancy between readability of Miranda warnings and defendants' reading comprehension skills. The limited

literacy of many defendants poses a formidable barrier to Miranda comprehension, especially for warnings with difficult reading levels. The literacy skills of most inmates are estimated at sixth or seventh grade (Harlow, 2003). Rogers, Hazelwood, Harrison and colleagues (2008) reported that a large majority (79.1%) of nationally representative Miranda warnings have reading levels above sixth grade, thus, exceeding the capacities of many defendants. Similarly, past studies by Helms (2003) and Greenfield and colleagues (2001) found more than two-thirds of Miranda warnings at this level.

Of particular importance, it cannot be assumed that defendants generally comprehend material at or above their reading capacities. Flesch-Kincaid estimates may underestimate reading levels because of its low threshold for comprehension at $\geq 75\%$ of the information. Greenfield and colleagues (2001) observed that full comprehension typically does not occur unless the material is two grades below the individual's measured abilities. They also noted that comprehension will be nearly impossible for material exceeding their capacities by two or more grades. This observation raises the question of whether Flesch-Kincaid is an accurate estimate of Miranda warning reading levels.

Method of Administration and Miranda Comprehension

The Supreme Court in *Miranda v. Arizona* (1966) did not specify any particular method of administration, oral or written, for advising suspects of their rights. In *Colorado v. Spring* (1986) and *Thai v. Mapes* (2005), the Court ruled that either oral or written forms are acceptable when administering Miranda

warnings. They stated that the substance of the warnings, rather than method of administration, is important when determining whether Miranda warnings are sufficient to convey defendants' constitutional protections. Therefore, procedure for administering the warnings depends on the law enforcement in a particular jurisdiction (Grisso, 2003; Oberlander & Goldstein, 2001). In a review of current Miranda practices, Oberlander and colleagues (2003) observed that police administer warnings either orally, in written format, or both. In a recent police survey of 631 police investigators, Kassin and colleagues (2007) revealed that a majority (67%) of Miranda warnings are administered orally with a smaller number of written administrations (29%). The remaining 4% were administered via audiotape or video tape recording. Because of these variations, it is important to consider how the method of Miranda advisement affects suspects' comprehension.

No Miranda comprehension research has been conducted regarding method of administration. However, language researchers (Rubin, Hafer, & Arata, 2000) have concluded that different cognitive abilities are needed for comprehension of oral compared to written material. Oral comprehension is an active process that places additional demands on cognitive processing (Carlile & Felbinger, 1991; Savage, 2001; Thompson & Rubin, 1996). Listeners must organize and interpret information acquired from both auditory and visual cues in order to understand the speaker's message. Any missing information is automatically inferred to understand the intended message. Such inferences

from partially understood information have direct implications for orally administered Miranda warnings. When suspects process only the gist of information and infer the rest, they may misinterpret or omit key components of Miranda.

In summary, researchers have consistently reported remarkable variations in Miranda warnings currently used by law enforcement. Dramatic differences in Miranda warnings and waivers have been observed for reading level, vocabulary, length, content, and method of administration. Contrary to the popular belief that all Miranda warnings are the same, the language and administration procedures used to convey defendants' legal rights to silence and legal counsel are highly variable across jurisdictions. As noted by Rogers, Harrison, Shuman, and colleagues (2007), there are both minor variations in language and significant differences in substantive content. Given this heterogeneity, consideration must be given to the effects that these fundamental differences in Miranda warnings have on suspects' Miranda comprehension. In addition to variation in language and method of administration, cognitive skills, such as intelligence and reading and listening comprehension are essential to Miranda comprehension.

Cognitive Abilities and Miranda Comprehension

Miranda research has strongly emphasized the relationship between cognitive impairment and Miranda comprehension (Everington & Fulero, 1999; Fulero & Everington, 1995). Specific cognitive factors, such as intellectual ability

and basic reading and listening comprehension skills, are particularly relevant when considering suspects' capacity for understanding Miranda warnings. If suspects lack these requisite abilities, they cannot make a knowing and intelligent waiver of rights. A majority of previous research examining cognitive skills in the context of Miranda has focused primarily on the relationship between overall intelligence and Miranda comprehension. Based on results from his seminal study, Grisso (1981) concluded that individuals' degree of Miranda understanding is related to differences in their general intellectual ability, as IQ was the primary variable related to both adult and juvenile scores on three measures of Miranda comprehension. More recently, attention has focused on evaluating Miranda-related abilities in populations with pervasive intellectual deficits, such as mentally retarded individuals.

Strong and consistent evidence from studies with mentally retarded individuals (Everington & Fulero, 1995; Fulero & Everington, 1999; O'Connell, Garmoe, & Goldstein, 2005) suggests that this population is less likely to comprehend Miranda warnings. For example, Everington and Fulero tested Miranda comprehension of adult probationers with and without mental retardation. Not surprisingly, a substantial portion of those with mental retardation failed substantive portions of the Miranda warnings, including (a) the right to remain silent (50.0%), (b) potential use of statements as evidence in court (55.0%), and (c) the right to an attorney before and during questioning (39.0%). They found a much higher percentage of probationers with (67.0%) than without

(17.0%) mental retardation did not meet minimal criteria for competence to waive rights, because they lacked a basic understanding of one or more core Miranda components. These results confirmed findings from their previous study (Fulero & Everington), which revealed 68.0% of mentally retarded probationers lacked minimal Miranda understanding. In contrast, Grisso (1981) reported only 55.3% of juveniles and 23.1% of offender adults in the general population fail to understand at least one Miranda component.

O'Connell and colleagues (2005) recently examined Miranda comprehension and intelligence using an updated version of Grisso's (1998) measures. Exhibiting complete Miranda failure, 50.0% of mildly mentally retarded adults in their study scored zero for all five Miranda components. In comparison, only 1.0% of Grisso's normative sample performed this poorly. Miranda understanding was very poor even when tested using an easier format (i.e., recognition vs. recall). When asked to recognize the Miranda rights from a list of alternatives, only 2.0% of mentally retarded individuals performed at levels greater than chance, which is remarkably lower than Grisso (1998) reported in his normative sample (75.0%).

The vocabulary and reading difficulty of Miranda warnings commonly exceed the capacities of mentally retarded suspects (Everington & Fulero, 1995). As previously described, Miranda-related vocabulary is the foundation of Miranda comprehension (Grisso, 2003; Rogers, Hazelwood, Sewell, et al, 2008). Many legal terms commonly found in Miranda warnings are incomprehensible for

cognitively impaired individuals. More specifically, Ericson and Perlman (2001) found that Miranda vocabulary words such as “accused,” “prosecute,” “charges,” “suspect,” “interrogate,” and “evidence” were not understood by at least 40% of mentally retarded participants. In their study, only 8 of 34 legal terms were adequately understood by these individuals, whereas individuals with average cognitive abilities had an accurate understanding of all words except for “prosecution.”

Many defendants with intellectual impairments also exhibit extremely low reading comprehension skills. The average individual with mild mental retardation reads at a third grade reading level (Fulero & Everington, 1999; Helms, 2003), far lower than the reading skills required for basic understanding of most Miranda warnings (Helms, 2003; Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al., 2008). Problems with reading comprehension are compounded by legal terms. Rogers, Hazelwood, Harrison, and colleagues (2008) analyzed the most common Miranda vocabulary and found that all of these words required at least a fourth grade education to identify the correct meaning, with a majority exceeding eighth grade. Therefore, Miranda warnings are rarely communicated in a language that intellectually impaired suspects can understand.

Intelligence is acknowledged as one factor to consider in the totality of circumstances approach to determining the validity of a Miranda waiver. Despite the strong relationship between intelligence and Miranda comprehension found in

past research, courts have accepted waivers made by individuals with quite low intellectual abilities. In his review of cases involving intellectually challenged defendants, Grisso (2003) concluded that waivers from those with IQ scores above 65 were generally ruled valid. However, IQ scores often do not accurately describe level of impairment in functional abilities related to Miranda comprehension (Follette, Davis, & Leo, 2007). Defendants who do not meet the threshold for mental retardation could exhibit severely diminished Miranda comprehension capacities sufficient to render their waivers invalid. Specifically, defendants with borderline intellectual functioning may have substantial difficulty understanding Miranda warnings. Moreover, it is important to investigate borderline intellectual functioning because of its prevalence in the correctional population.

Beyond intelligence, defendants' reading and listening comprehension are fundamental capacities related to Miranda comprehension. Early research with juveniles (Wall & Furlong, 1985) found that reading and listening abilities were significantly correlated with each other and measures of Miranda comprehension. However, results from their seminal study are limited because they did not rely on standardized psychological measures, and did not include adults.

Tupling and Salekin (2005) were the first researchers to investigate the importance of listening comprehension to Miranda comprehension in a small sample of recently arrested individuals. In contrast to Wall and Furlong (1985), their analysis failed to find a significant relationship between listening and

general Miranda understanding as measured by Grisso's (1998) tests. However, they found that listening comprehension is predictive of defendants' ability to recognize their rights when presented with a list of alternatives.

In a recent study, Rogers, Harrison, Hazelwood, and colleagues (2007) examined the relationship of reading and listening to Miranda comprehension among mentally disordered criminal defendants. In contrast to past research on listening comprehension (Tupling & Salekin, 2005; Wall & Furlong, 1985), they found that reading comprehension was the only variable besides intelligence to significantly discriminate between good and poor Miranda understanding among mentally disordered offenders. Their analysis of the highest (> 60.7%) and lowest (< 35.0%) Miranda comprehension quartiles revealed very large differences ($d = 1.77$) in reading comprehension levels. They also found low reading and listening comprehension, at the fourth and fifth grade levels respectively, was associated with poor Miranda understanding. In contrast, defendants with a good understanding had reading and listening comprehension more than four grades higher. In light of limited past research and somewhat inconsistent findings, both reading and listening comprehension must be reexamined with respect to their effects on Miranda comprehension.

Current Study

Although *Miranda v. Arizona* (1966) outlined the substantive content required for Miranda warnings, they allowed jurisdictions freedom to use their own language and methods. Consequently, Miranda warning versions vary

remarkably across United States jurisdictions. Difficult language and method of administration can have detrimental effects for Miranda comprehension.

Research must examine Miranda warnings as they are applied in today's law enforcement practices. In light of the remarkable heterogeneity among Miranda warnings and procedures, it is critical to evaluate Miranda comprehension for representative warnings in both oral and written formats.

The primary goal of the current study was to provide empirical data regarding defendants' comprehension of five Miranda warning variations. Specifically, the first research question examined how Miranda warning reading level, length, and method of administration affect Miranda comprehension. Although these Miranda warning variables are expected to affect defendants' level of Miranda comprehension, characteristics of the defendant also play a significant role in Miranda understanding.

Cognitive deficits commonly found among defendants may also present barriers to Miranda comprehension. Past research has evaluated the relationship of intelligence and Miranda comprehension in vulnerable populations such as those who are mentally retarded. Therefore, the second research question is concerned with the relationship of borderline intellectual functioning to level of Miranda comprehension.

The final research question examined educational abilities that are critical to Miranda comprehension, including levels of reading and listening comprehension. As mentioned, estimates of listening comprehension cannot be

extrapolated from reading comprehension scores. Previous research (Carlile & Felbinger, 1991; Savage, 2001) has addressed the relationship between reading and listening comprehension, finding only moderate correlations. Therefore, this study independently evaluated reading and listening skills, and investigated their relationship to comprehension of oral and written Miranda warning administrations.

Research Questions and Hypotheses

Research Question #1. Do variations in Miranda warnings and Miranda-related procedures affect defendants' comprehension of Miranda warnings? The first research question examines the effects of Miranda reading level, word length, and method of administration (i.e., oral vs. written) on the comprehension of Miranda statements.

- Hypothesis #1: Defendants will comprehend more Miranda concepts (i.e., higher MSS scores) for warnings with reading levels below 8th grade, compared to warnings that require at least a 10th grade education for comprehension.
- Hypothesis #2: Defendants will comprehend fewer Miranda concepts for lengthier than shorter Miranda components.
- Hypothesis #3: Defendants will comprehend a higher proportion of Miranda components for written than oral administrations of the warnings.

Research Question 2. The second research question addresses cognitive abilities in the context of Miranda comprehension. It examines the capacity of defendants with borderline intellectual functioning to comprehend representative Miranda warnings

- Hypothesis 4: Defendants with borderline IQ scores will have poorer comprehension for both oral and written Miranda administrations than those with average IQ scores.

Research Question 3. The final research examines the relationship between defendants' reading and listening comprehension skills and their ability to comprehend Miranda components.

- Hypothesis 5: Reading comprehension and listening comprehension will be positively correlated for the entire sample of pretrial defendants.
- Hypothesis 6: The correlation between defendants' reading and listening skills will be smaller for participants with borderline IQ than those with average intellectual ability.
- Hypothesis 7: Defendants' reading and listening comprehension will predict comprehension of oral and written Miranda warning versions.

CHAPTER 2

METHOD

Design

The current study used a mixed quasi-experimental approach to examine differences in Miranda administration methods (i.e., oral and written) and Miranda comprehension. Participants were randomly assigned to receive oral or written Miranda administrations. The between-subjects independent variables included defendants' characteristics and comprehension of representative Miranda warnings. For criminal defendants, individual variables included IQ and reading and listening comprehension scores. Miranda-related variables included the reading level of Miranda warnings, the method of administration, and the length of Miranda warnings. The Miranda Statements Scale (MSS; Rogers, 2005) was used as the dependent variable to measure overall comprehension as well as comprehension of the individual Miranda components.

Because of the retrospective nature of Miranda research, it is difficult to get an accurate assessment of a suspect's understanding of Miranda at the time of arrest. To increase ecological validity of the current study, participants were recruited usually within 24 hours of their arrests.

Participants

Participants were recently arrested adult detainees at Grayson County Jail in Sherman, Texas. The sample consisted of 96 (62 males, 34 females) participants who ranged in age from 18 to 58 years ($M = 29.76$, $SD = 9.24$). The Grayson County Jail serves a county comprised of both urban and rural areas. For the total sample, the self-reported ethnic composition of the sample was 64.6% European American, 22.9% African American, 6.3% Hispanic American, 1.0% Asian American, 3.1% bi-racial, and 2.1% other. Although three participants reported their native language as non-English, all participants spoke English fluently.

Research and Administrative Approval

This research project was jointly approved by the Grayson County Jail administration and the University of North Texas Institutional Review Board (see Appendix A).

Materials

Demographic Information Form (DII)

The DII is a self-report form (see Appendix B). It included basic characteristics of the defendants, including date of birth, gender, ethnicity, first language spoken, highest level of education attained, and marital status. Regarding socio-economic status, participants were asked about their previous occupation and previous year's gross income. In order to examine prior experience with criminal justice system, information regarding past and current

legal variables were collected. These variables included (a) date and time of arrest, (b) current legal charges, and (c) number of total arrests. Finally, the number of previous psychiatric hospitalizations was collected in consideration of previous psychological functioning.

Wechsler Abbreviated Scale of Intelligence (WASI)

The WASI (Psychological Corporation, 1999) is a brief standardized measure of intelligence, similar in format to the *Wechsler Adult Intelligence Scale-Third Edition* (WAIS-III). The WASI is composed of four subscales: Vocabulary, Similarities, Block Design, and Matrix Reasoning. Calculations from these subtests produce three IQ scores: Verbal IQ, Performance IQ, and Full Scale IQ. Average split-half reliability coefficients for WASI subscales in an adult sample range from .92 to .98. The WASI has good test-retest reliability with coefficients for the adult sample ranging from .79 to .90 for individual subtests, and from .87 to .92 for the IQ scales. Demonstrating concurrent validity, WASI Full Scale IQ scores are correlated highly (range of .84 to .92) with corresponding IQ scores derived from the WAIS-III (Psychological Corporation). For all analyses in the current study that included intelligence as a variable, defendants were divided into two groups based on WASI IQ scores: (a) borderline (71 to 84) and (b) average (> 95) intellectual functioning.

Wechsler Individual Achievement Test-Second Edition (WIAT-II)

The WIAT-II (The Psychological Corporation, 2002) is a widely used, comprehensive assessment for measuring academic achievement. WIAT-II

subtests measure a wide range of skills that are typically learned in a school setting. For the current study, two subtests were administered: Reading Comprehension and Listening Comprehension. Reading Comprehension tasks examines one's ability to read passages and answer questions about the explicit content, and make inferences based on context cues. Listening Comprehension items assess three listening components: receptive vocabulary, sentence comprehension, and expressive vocabulary. WIAT-II conveniently provides age-based standard scores as well as the grade equivalent of an individual's current functioning. The WIAT-II is a reliable measure of academic achievement skills, with split-half reliability correlations ranging from .94 to .98 for the Reading Comprehension subtest, and from .83 to .92 for the Listening Comprehension subtest. Good test-retest reliability was also reported on adult samples for both Reading (.81) and Listening (.93) Comprehension subtests (The Psychological Corporation).

Miranda Statements Scale (MSS)

The MSS (Rogers, 2005) is a newly developed scale to evaluate Miranda comprehension. The MSS measures Miranda comprehension by asking individuals to paraphrase each Miranda component in their own words. It is composed of 30 statements representative of Miranda components at five levels of reading difficulty. The MSS was developed through a prototypical analysis by asking Miranda experts to select two representative versions at each reading level. As evidence of construct validity, the experts reached a high level of

agreement (98.3%) for prototypical components after three iterations. Two parallel versions of the MSS (MSS-A or MSS-B) were developed by randomly selecting one of the two representative Miranda components at each reading level.

Scoring categories were developed based on the content of the warnings. A score is assigned to each Miranda concept based on the presence or absence of the specific content in the individual's verbatim response. Total scores are calculated based on the proportion of content categories that an individual answered correctly. Rogers, Harrison, Hazelwood, and Sewell (2007) examined the interrater reliability of both MSS versions, and reported excellent agreement among raters ($r = .93$).

Operationalizing of Miranda Warning Variables

Levels of Miranda Comprehension

Classification used by Rogers, Harrison, Hazelwood and colleagues (2007) in the development of the MSS was used to categorize participants into two groups for comparative purposes: good Miranda comprehension ($\geq 70\%$) and poor Miranda comprehension ($< 50\%$).

Miranda Warning Reading Levels

For Miranda warning reading level as an independent variable, MSS warnings were classified into two groups based on the warning's Flesch-Kincaid reading level: (a) easy warnings ($< 8^{\text{th}}$ grade; MSS 1 and 2) and (b) difficult warnings ($\geq 10^{\text{th}}$ grade; MSS 4 and 5). The dependant variable was average

comprehension scores for either easy (MSS 1 and 2) or difficult (MSS 4 and 5) levels of the MSS.

Analysis of Miranda Component Length

Three Miranda components from the MSS were chosen to evaluate whether longer warnings are more difficult to comprehend (see Appendix C). Statements included in the analysis were characterized by a difference in length of at least 10 words.

Procedure

Selection Criteria and Recruitment for Participants

The inclusion criteria were broad in order to maximize the representativeness of the sample. Specifically, recently arrested defendants were included if they were at least 18 years of age, able to speak fluent English, and able to give written informed consent. Inclusion did not consider individual variables, such as health, gender, race, and ethnicity. Defendants were excluded if their arrest occurred more than 72 hours prior to research participation. In addition, the jail staff identified inmates who would likely be uncooperative or pose a security risk.

Participant recruitment was obtained through assistance from the Grayson County Jail staff. The jail employees provided a list of inmates who expressed interest in participating. Inmates from the list were approached individually and given a brief description of the study. As an external incentive for participation,

the researcher explained that they would be compensated \$15 for completing the study.

Inmates who agreed to participate in the research met individually with the researchers, who explained the purpose of the study in more detail. In accordance with the University of North Texas Institutional Review Board, informed written consent was obtained. All participants were presented with a copy of the approved informed consent to read. Basic research procedures were also explained to minimize any confusion. Before signing the consent form, participants were encouraged to ask the researcher any questions about the study. Participation was allowed only if inmates were able to give written informed consent.

The data collection involved one session of test administration lasting approximately three hours. Participants were allowed to take breaks throughout the session, when necessary, to reduce fatigue. Administration of measures occurred in a private room in order to maximize participants' confidentiality.

Test Administration

The researchers collected demographic information and administered the measures in the following order, WASI, MSS levels 5 and 4, WIAT-II Reading Comprehension, WIAT-II Listening Comprehension, and MSS Levels 3, 2, and 1. The five reading difficulty levels of warnings included on the MSS were administered in decreasing order of difficulty in order to reduce practice effects caused by testing participants' performance on the same information multiple

times. As another way to control for these practice effects, additional measures from the concurrent programmatic research were administered between each of the five MSS versions. A complete list of these measures can be found in Appendix D.

Participants were randomly selected to receive either the MSS-A or MSS-B. All participants were administered some MSS Levels orally and others in written format. Participants were randomly selected to receive oral administrations of either the odd or even levels of the MSS; the remaining MSS levels were administered in written format.

Debriefing occurred after test administration, and the researcher answered any questions the participant raised about the study. As a manipulation check, participants were asked about their level of involvement and effort after completing the study. At the end of the data collection, \$15 was placed into each inmate's institutional funds.

CHAPTER 3

RESULTS

The recently arrested pretrial defendants used in the current study varied substantially in their backgrounds, and represented a wide range of defendants. Selected background characteristics for the defendants regarding education, criminal history, and mental health history are presented in Table 1.

Table 1

Background Characteristics of Pretrial Defendants

Variable	<i>M</i>	<i>SD</i>	Range
Level of education	12.19	1.96	8 - 20
Number of arrests	7.31	12.92	1 - 100
Psychiatric hospitalizations	.79	2.62	0 - 20

The recently arrested defendants differed considerably in their levels of education. A slight majority (53.1%) had approximately a high school graduate education. Their average education level of 12th grade ($M = 12.19$) is somewhat higher than expected based on past research finding limited education. Of the remaining defendants, 25.0% had less than a high school education. At the opposite end, defendants with some college education (21.9%) were well represented in the current study.

Regarding prior experience with the legal system, the sample was characterized by a large variation in number of arrests and nature of previous charges. A large majority had been arrested multiple times, with only 11.5% reporting a single arrest. Of those with multiple arrests, a majority (58.8%) had five or fewer arrests, and few defendants (4.7%) reported more than 20 prior arrests.

For mental health backgrounds, the only variable collected was the number of previous psychiatric hospitalizations. Almost one fourth (21.3%) of defendants reported at least one hospitalization. Half reported a single previous hospitalization, while the remaining half reported multiple hospitalizations ranging from 2 to 20.

Levels of intellectual ability and academic achievement are of particular importance in the current study because they are critical to Miranda comprehension. Table 2 displays descriptive data regarding performance on measures of Miranda-relevant cognitive variables. The recently arrested defendants exhibited a wide range of scores on all cognitive measures, but mean intellectual abilities and academic achievement skills were in the average and low average ranges respectively. Their verbal abilities (VIQ), critical to Miranda comprehension (Rogers & Shuman, 2005), were notably ($d = .57$) lower ($M = 89.20$) than their nonverbal (PIQ) abilities ($M = 91.49$). Interestingly, their tested reading and listening skills were approximately three grades lower than their reported levels of education. As evidence that overall intellectual ability

overestimates Miranda-related comprehension skills, both reading and listening comprehension were considerably weaker (d reading = .57; d listening = .27) than estimates of overall intelligence.

Table 2

Cognitive Variables and MSS Comprehension for Male and Female Pretrial Defendants

Variable	Entire sample		Males		Females		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	Range	<i>M</i>	Range		
Education level	12.19	1.96	12.10	8-20	12.35	9-20	.37	.54
Verbal IQ	89.20	11.32	88.61	67-121	90.26	65-115	.47	.50
Performance IQ	95.85	12.02	95.87	61-118	95.82	69-119	.00	.99
Full scale IQ	91.49	11.20	91.13	63-119	92.15	65-111	.18	.67
Reading comprehension ^a	83.31	17.04	82.29	59-117	85.18	60-113	.63	.43
Reading grade ^b	9.09	2.84	8.89	3.6-13.0	9.44	3.8-13.0	.80	.37
Listening comprehension ^a	87.97	14.23	88.31	22-114	87.35	62-110	.10	.76
Listening grade ^b	9.06	2.56	9.13	4.5-13.0	8.93	4.5-13.0	.13	.72
MSS 1	66.32	17.80	65.41	11-100	67.97	33-100	.45	.50
MSS 2	67.36	15.56	67.00	8-100	68.01	25-88	.09	.76
MSS 3	57.18	16.27	56.02	14-93	59.29	33-87	.89	.35
MSS 4	56.68	15.01	56.61	23-42	57.38	25-92	.06	.81
MSS 5	50.34	15.56	49.70	6-82	51.50	6-82	.29	.59

Note. ^aWIAT-II age-based standard scores. ^bWIAT-II grade equivalent

Gender differences were examined for defendants' levels of education, intelligence, reading, listening, and Miranda warning comprehension (see Table 2). Males and females performed strikingly similar on measures of intelligence and academic achievement. The largest difference was a mere-three point difference for reading comprehension with males performing slightly worse than females. Similarly, females scored slightly higher on measures of Miranda comprehension, but these differences were minimal and non significant.

Overall Miranda Comprehension

The primary focus of the current study was to evaluate recently arrested defendants' capacity to achieve a basic understanding (i.e., knowing prong) of representative Miranda warning components included on the MSS. As illustrated in Table 3, the recently arrested defendants exhibited surprisingly poor overall Miranda comprehension ($M = 58.90$). Less than half (43.8%) were able to achieve good Miranda comprehension, even for the lowest MSS level (< 6th grade). Interestingly, the percentage of defendants with poor comprehension was not the lowest for the easiest Miranda warnings (< 6th grade). Instead, defendants least frequently failed warnings for the second MSS level (i.e., sixth to eighth grade). This pattern was consistent regardless of intelligence or method of administration. It could indicate Miranda warnings that are too simple and concise are less understood by defendants, due to omission of important details or clarification of legal terms.

Table 3

Descriptive Data and Percentage of Defendants with Good and Poor Comprehension for each Level of MSS

MSS version	Reading level	<i>M</i>	<i>SD</i>	Range	% Poor	% Good
MSS 1	< 6	66.32	17.80	11-100	14.6	43.8
MSS 2	6.0 – 7.9	67.36	15.56	8-100	9.4	47.9
MSS 3	8.0 – 9.9	57.18	16.27	14-93	34.5	22.9
MSS 4	10.0 – 11.9	56.68	15.01	23-92	27.1	16.7
MSS 5	≥ 12	50.34	15.56	6-82	39.6	8.3
MSS total		58.90	11.34	27-79	17.7	16.7

Note. % Good = participants with good comprehension (i.e., ≥ 70% correct concepts on the MSS); % Poor = participants with poor comprehension (i.e., < 50% correct concepts on the MSS); MSS total = average comprehension across all MSS levels.

Regarding the relative difficulty of individual Miranda components (see Table 4) a majority of the recently arrested defendants had a good grasp of Components 1 (right to silence) and 2 (protection against self-incrimination). Defendants had the most difficulty understanding Components 3 and 4, regarding the right to legal services. For these two components, over one-third of the sample failed to understand even 50% of concepts for the given component. Although Component 5 (rights are continuous and can be reasserted any time) also presented considerable difficulty ($M = 58.29$), an equal number of defendants exhibited good compared to poor understanding of this component.

Table 4

Comprehension of Individual Miranda Components and Percentage of Defendants Achieving Good and Poor Comprehension for each Component

Component	<i>M</i>	<i>SD</i>	Range	% Poor comprehension	% Good comprehension
Silence	74.09	13.60	38-100	3.1	69.8
Incrimination	68.99	18.37	13-100	11.5	59.4
Attorney	53.68	15.46	12-88	34.4	16.7
Indigent defense	52.15	13.07	22-76	36.5	8.3
Continuing rights	58.29	17.60	8-96	22.9	22.9

Note. % Good = participants with good comprehension (i.e., $\geq 70\%$ correct concepts on the MSS); % Poor = participants with poor comprehension (i.e., $< 50\%$ correct concepts on the MSS).

An item analysis of frequently missed (i.e., $> 50\%$ failed) MSS concepts revealed clear trends with respect to difficult Miranda components. First, 61.2% of particularly problematic concepts are related to the right to an attorney (#3) and free access to an attorney (#4). These findings are understandable because they are the most difficult Miranda prongs to understand. The second trend observed was for reading difficulty of the components. Not surprisingly, a large majority (77.6%) of concepts missed by more than half of defendants required reading abilities of more than eighth grade. Regarding Miranda warning complexity, the third trend was that defendants frequently missed two or more concepts for all complex (i.e., ≥ 4 concepts) MSS Miranda components.

Comprehension of Different Miranda Warning Versions

The first research question evaluated the effects of three Miranda-related variables on Miranda comprehension. These variables included: (a) reading level, (b) length, and (c) method of administration.

Reading Levels of Miranda Warnings

As a general pattern for Miranda warning reading levels, Table 3 illustrates that fewer defendants achieved good comprehension of the warnings at each increase in reading difficulty. All warnings at or above the eighth grade resulted in less than 25% of defendants achieving good Miranda understanding. At the highest reading level, the majority of the sample (57.3%) exhibited poor comprehension for warnings, while only 8.3% had a good grasp of these warnings.

Hypothesis 1 predicted that Miranda warnings with reading levels higher than 10th grade would be more difficult to comprehend when compared to those at lower reading levels (< 8th grade). Using one-way ANOVA, defendants had significantly poorer comprehension, $F(1, 95) = 90.78, p < .001$, for warnings with difficult ($M = 53.6\%$, $SD = 12.92$) compared to easy reading levels ($M = 66.8\%$, $SD = 13.71$). The magnitude of this difference was large ($d = .99$).

Length of Miranda Warnings

Hypothesis 2 examined whether the length of the Miranda warnings affected the percentage of MSS comprehension. As shown in Table 5, one-tailed ANOVA results revealed no significant differences were found between long and

short Miranda components. However, one pattern emerged in the predicted direction. A moderate difference ($d = .31$) was found for comprehension of the basic right to an attorney. As expected, a considerably higher number of defendants failed to comprehend longer versions of this component. The other two components evidenced only minimal differences. Despite their similar levels of comprehension, they were significantly more likely to exhibit failed understanding for the longer version.

Table 5

Differences in Comprehension Between Long and Short Versions of Miranda Components

Component	Long warning				Short warning				<i>F</i>	<i>p</i>	<i>d</i>
	Words	<i>M</i>	<i>SD</i>	% Poor	Words	<i>M</i>	<i>SD</i>	% Poor			
Attorney	35	55.0	28.62	40.0	19	63.0	22.75	26.1	2.30	.07	.31
Indigent defense	34	47.8	21.62	30.4	19	50.5	19.23	28.0	.41	.26	.13
Continuing rights	44	43.3	33.84	28.0	29	43.5	27.77	17.4	.001	.49	.05

Note. % Poor = participants with poor comprehension (i.e., < 50% correct concepts for each component on the MSS). Due to directional hypotheses, significance reported is based on one-tailed analyses.

Differences in Miranda comprehension for long compared to short components were examined independently for oral and written administrations of Miranda (see Tables 6 and 7). Among the three components examined, the largest effect was found for the component explaining the basic right to legal counsel for both written ($d = .51$) and oral ($d = .29$) administrations of the warnings. However, comprehension was only significantly better for this component when presented with written warnings. One possibility for this finding

is that oral warnings result in poor overall comprehension, regardless of other factors such as word length.

Table 6

Differences Between Long and Short Miranda Components for Written Administrations

Miranda component	Long warning			Short warning			F	p	d
	Words	% Correct		Words	% Correct				
		M	SD		M	SD			
Attorney	35	63.6	24.48	19	75.0	20.01	2.71	.05	.51
Indigent defense	34	55.6	18.30	19	58.3	19.61	.23	.32	.14
Continuing rights	44	52.5	33.56	29	50.0	20.61	.08	.39	.09

Note. Due to directional hypotheses, significance reported is based on one-tailed analyses.

Table 7

Differences Between Long and Short Miranda Components for Oral Administrations

Miranda component	Long warning			Short warning			F	p	d
	Words	% Correct		Words	% Correct				
		M	SD		M	SD			
Attorney	35	47.0	29.83	19	54.5	21.89	1.03	.16	.29
Indigent defense	34	44.2	22.70	19	40.9	14.53	.35	.28	.17
Continuing rights	44	34.1	31.49	29	38.5	28.98	.25	.31	.14

Note. Due to directional hypotheses, significance reported is based on one-tailed analyses.

Table 8

Percentage of Defendants with Poor Comprehension of Miranda Components for Different Lengths and Modes of Administration

Miranda component	Poor oral warnings ^a		Poor written warnings ^a		X ²
	N	%	N	%	
#3 Attorney					4.06*
Long	11	50.0	8	29.6	
Short	11	42.3	1	5.6	
#4 Indigent defense					1.19
Long	10	38.5	2	11.0	
Short	9	41.0	5	18.5	
#5 Continuing rights					.23
Long	15	68.2	13	48.1	
Short	15	57.7	10	55.6	

Note. ^aLess than 50% correct concepts on the MSS. *For significance, $p < .05$.

For comparative purposes, the percentage of defendants with failed comprehension for long and short components is displayed in Table 8 for both oral and written administrations. The most salient finding is that shorter warnings in written format were rarely failed. As a general pattern, fewer Miranda concepts were understood for warnings with higher reading levels as well as for oral administrations. Defendants failed to comprehend oral warnings at a much higher rate (i.e., at least 20%) than written warnings, especially for lengthier

components. As one exception, defendants only failed to understand the final component (i.e., continuing rights) slightly more often for oral compared to written versions. This exception is likely due to floor effects, as a large percentage (48.1%-68.2) of defendants exhibited failed comprehension regardless of word length or method of administration.

Miranda Warning Method of Administration

A primary focus of the current study was to examine the relationship between method of administration and Miranda comprehension. For Hypothesis 3, differences in pretrial defendants' comprehension for oral and written administrations of Miranda warnings were examined via ANOVAs. As predicted, the defendants performed worse for oral Miranda administrations. Defendants obtained generally higher levels of comprehension for written warnings across all levels of the MSS (see Table 9). Moderate to large differences between oral and written administrations were found for warnings with easy ($d = .68$) moderate ($d = 1.07$), and difficult ($d = .74$) reading levels. The expected pattern regarding reading difficulty was observed for written warnings (see Table 9). As the reading levels of the Miranda warnings increased, comprehension decreased. Interestingly, this trend was not found when defendants received oral administrations of the warnings. This pattern of comprehension for oral warnings could potentially explain the unexpected findings with respect to MSS Levels 2 and 4.

Table 9

MSS Comprehension for Different Methods of Administration at each Grade Level

Reading level	Oral warnings		Written warnings		<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
< 6	61.49	17.78	72.87	15.70	10.66	.002	.68
6-7.9	67.50	15.88	68.14	15.44	.04	.84	.04
8-9.9	49.64	15.63	65.30	13.47	26.82	.000	1.07
10-11.9	55.22	13.22	57.93	16.74	.75	.39	.18
≥ 12	44.75	15.45	56.91	12.43	17.35	.000	.74

To further examine differences for oral and written warnings, the percentage of defendants with good ($\geq 70\%$) and poor ($< 50\%$) Miranda comprehension was calculated for warnings with three levels of reading difficulty (see Table 10). When Miranda warnings were administered in oral format, the percentage of defendants with poor comprehension was at least three times higher than for written administrations. The predicted pattern for Miranda warning reading level was found for both methods of administration. For written warnings, the percentage of defendants with poor comprehension increased gradually at higher reading levels. In contrast, a substantial decline in level of comprehension occurred for oral warnings at or above eighth grade.

Table 10

Miranda Comprehension for Oral and Written Administrations at Different Flesch-Kincaid Reading Levels

Reading level	Oral warnings		Written warnings		X^2
	Good	Poor	Good	Poor	
	Comprehension	Comprehension	Comprehension	Comprehension	
	N (%)	N (%)	N (%)	N (%)	
Easy (< 6)	15 (31.2)	9 (18.8)	27 (60.0)	3 (6.7)	5.85*
Moderate (8-9.9)	6 (12.5)	27 (56.3)	16 (35.6)	7 (15.6)	14.99**
Difficult (\geq 12)	1 (2.1)	28 (58.3)	7 (15.6)	8 (17.8)	12.40**

Note. For significance, * $p < .05$; ** $p < .01$. Good comprehension = participants with good comprehension (i.e., \geq 70% correct concepts on the MSS); Poor comprehension = participants with poor comprehension (i.e., < 50% correct concepts on the MSS).

Past research demonstrated that cognitive deficits compromise Miranda comprehension. In current research, cognitive variables were examined for defendants with good and poor Miranda comprehension for both oral and written Miranda administrations (see Table 11). For written warnings, moderately large differences were found for intelligence and reading comprehension, but not for listening comprehension. In comparison, much larger effects were observed for orally presented warnings across all cognitive variables except PIQ, which would be expected based on its marginal relevance to Miranda comprehension. The largest differences were observed for critical Miranda-related skills, such as verbal abilities ($d = 1.04$), reading ($d = 1.37$), and listening ($d = 1.18$). As

expected, cognitive skills are even more critical to comprehension for oral than to written Miranda administrations. For example, the difference in reading skills was nearly three times larger for oral than written warnings, and more than seven times the effect was found for listening skills.

Table 11

Differences Across Cognitive Variables Between Poor and Good Miranda Understanding

Variable	Written warnings					Oral warnings				
	Poor	Good	<i>F</i>	<i>p</i>	<i>d</i>	Poor	Good	<i>F</i>	<i>p</i>	<i>d</i>
Verbal IQ	87.70	93.97	2.31	.07	.58	84.97	95.57	10.72	.00	1.04
Performance IQ	89.20	97.78	3.78	.03	.67	92.20	99.00	3.83	.03	.67
Full Scale IQ	87.50	95.31	3.62	.03	.67	87.17	96.93	8.85	.003	.98
Reading grade ^a	8.66	10.04	1.94	.09	.47	7.53	10.50	19.03	.000	1.37
Listening grade ^a	9.24	9.62	.16	.35	.15	7.97	10.41	13.20	.001	1.18

Note. Good = participants with good comprehension (i.e., $\geq 70\%$ correct concepts on the MSS); Poor = participants with poor comprehension (i.e., $< 50\%$ correct concepts on the MSS). ^aWIAT-II grade equivalent. Due to directional hypotheses, significance reported is based on one-tailed analyses.

Cognitive Functioning and Miranda Comprehension

The second research question addressed the effects of specific cognitive abilities on Miranda comprehension, including intellectual functioning, reading comprehension, and listening comprehension. As noted in the Methods chapter,

defendants were categorized into two IQ groups based on WASI scores: average (FSIQ > 95; $M = 102.79$, $SD = 5.47$) and borderline (FSIQ < 85; $M = 76.71$, $SD = 5.74$). Overall verbal abilities were substantially lower (i.e., > 20 points) among impaired defendants ($M = 76.95$, $SD = 6.45$) compared to defendants with average intellectual abilities ($M = 99.21$, $SD = 7.57$). As illustrated in Table 12, large differences were found between the two groups for all cognitive variables.

The investigation of differences in reading and listening comprehension levels yielded very large effects. Not surprisingly, defendants with borderline intellectual functioning had substantially lower reading ($d = 2.37$) and listening ($d = 1.37$) comprehension than those with average intelligence. Although self-reported level of education was only one grade different, defendants with borderline intelligence exhibited much lower levels of reading and listening based on standardized test scores (i.e., WIAT-II grade equivalent). Their reading comprehension scores equivalent to five grades (6.17 vs. 11.25) lower than that of defendants in the average IQ group ($d = 2.70$). The same pattern was found for listening comprehension ($d = 1.47$), yielding a much smaller effect when compared to that found for reading comprehension. Despite this difference, a large deficit of three grades (7.50 vs. 10.72) was found between the groups. Overall, the current results suggest that specific Miranda comprehension skills are severely compromised among defendants with only mild impairments in overall intelligence.

Table 12

Differences in Cognitive Abilities for Borderline and Average Intelligence Groups

Variable	Borderline intelligence		Average intelligence		<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Education	11.38	1.50	12.47	2.15	4.25	.04	0.59
Vocabulary	32.24	7.08	49.39	6.83	83.22	.000	2.47
Similarities	35.29	6.51	49.71	4.89	92.51	.000	2.50
Reading skills ^a	67.71	7.85	95.82	14.86	66.32	.000	2.37
Reading grade ^b	6.17	1.69	11.25	2.05	93.91	.000	2.70
Listening skills ^a	77.95	15.96	96.58	10.80	28.41	.000	1.37
Listening grade ^b	7.50	2.30	10.72	2.07	30.21	.000	1.47

Note. Borderline intelligence = participants with FSIQ < 85; average intelligence = participants with FSIQ > 95. ^a WIAT-II age-based standard scores. ^b WIAT-II grade equivalent. Due to directional hypotheses, significance reported is based on one-tailed analyses.

For Hypothesis 4, ANOVAs examined whether recently arrested defendants with borderline intelligence exhibit significantly lower levels of Miranda warning comprehension than defendants with average intellectual abilities. Moderate to large differences were found between the groups for all levels of the MSS except for MSS Level 2 (see Table 13). The expected pattern with respect to reading level was found for both IQ groups. Interestingly, defendants with borderline intellectual functioning exhibited a dramatic decrease in comprehension of almost 20% for warnings above eighth grade. In contrast, defendants with average intelligence exhibited the expected gradual decrease in level of Miranda comprehension for more difficult warnings.

Table 13

Differences in MSS Miranda Comprehension for Borderline and Average IQ Groups

Version	Borderline intelligence			Average intelligence			<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range			
MSS 1	58.00	20.04	11-94	68.97	15.85	28-100	5.35	.01	.61
MSS 2	65.28	11.05	42-83	67.11	18.58	8-100	.17	.34	.12
MSS 3	46.61	16.16	14-87	60.66	16.64	23-93	9.84	.001	.86
MSS 4	46.20	13.40	23-69	58.64	13.70	33-92	11.32	.000	.92
MSS 5	41.77	17.02	6-71	53.57	16.63	6-82	6.70	.006	.70
Total MSS	50.68	10.96	29-71	61.07	11.77	27-77	11.07	.001	.91

Note. Borderline intelligence = participants with FSIQ < 85; average intelligence = participants with FSIQ > 95. Due to directional hypotheses, significance reported is based on one-tailed analyses.

As illustrated in Table 14, substantially fewer defendants with borderline intellectual abilities were able to achieve good Miranda comprehension. The percentage of Impaired defendants with good Miranda comprehension was twice as low as that of intellectually average defendants, even for warnings with easier reading levels (i.e., < 6th and 6.0 - 7.9). Although this finding is consistent regardless of the reading difficulty, Miranda warnings with higher reading levels were especially problematic for impaired defendants. In fact, once the warning's reading level surpassed the eighth grade, fewer than 5% of intellectually challenged defendants achieved a good (i.e., ≥ 70%) understanding of representative warnings.

Table 14

Good and Poor Miranda Comprehension for Participants with Borderline and Average Intelligence

MSS reading level	Borderline intelligence		Average intelligence		χ^2
	Good N (%)	Poor N (%)	Good N (%)	Poor N (%)	
< 6	6 (28.6)	5 (23.8)	19 (50.0)	2 (5.3)	5.45*
6-7.9	8 (38.1)	2 (9.5)	20 (52.66)	4 (10.5)	.05
8-9.9	1 (4.8)	13 (61.9)	12 (31.6)	10 (26.3)	8.33**
10-11.9	0 (0)	11 (52.4)	9 (23.7)	9 (23.7)	7.98**
≥ 12	1 (4.8)	11 (52.4)	6 (15.8)	13 (34.2)	2.27

Note. For significance, * $p < .05$; ** $p < .01$. Borderline intelligence = participants with FSIQ < 85; average intelligence = participants with FSIQ > 95. Good = participants with good comprehension (i.e., ≥ 70% correct concepts on the MSS); Poor = participants with poor comprehension (i.e., < 50% correct concepts on the MSS).

Educational Abilities and Miranda Comprehension

The third research question explored specific educational abilities, such as reading and listening comprehension, as they are related to Miranda comprehension. Similar to previous estimates of inmates' literacy levels, the current results revealed a high prevalence of reading deficits in the current sample of pretrial defendants. Reading levels below 12th grade were observed for an overwhelming majority (71.9%) of defendants. Furthermore, one-third (36.5%) had reading skills below the eighth grade. For listening comprehension, results

revealed deficits similar to those apparent in reading comprehension. One-third (31.3%) exhibited oral comprehension skills below the eighth grade. These findings strongly suggest that deficits in listening and reading abilities are highly prevalent within jail-based populations.

The reading and listening levels of defendants with good and poor Miranda warning comprehension were examined for all MSS levels. As expected, Table 15 illustrates the general trend that lower levels of reading and listening were present among defendants with poor than good comprehension across all Miranda warning versions. Regardless of the warning's reading difficulty good comprehension required reading and listening abilities greater than ninth grade. An interesting finding was that defendants with poor comprehension had reading and listening comprehension levels of at least eighth grade, which is higher than expected based on past research (Rogers, Harrison, Hazelwood, & Sewell, 2007). This high level of skills required to comprehend warnings at any reading level may be due to including both oral and written warnings in the current analysis.

Table 15

Reading Skills Observed for Poor and Good Miranda Comprehension at Each Level of MSS

Reading skills grade ^a							
MSS reading level	Poor comprehension		Good comprehension		<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
< 6	8.10	3.00	9.58	2.65	3.08	.04	.52
6-7.9	8.88	3.06	9.68	2.71	.63	.22	.28
8-9.9	8.09	2.47	10.24	2.37	10.29	.001	.89
10-11.9	8.29	2.45	10.39	2.48	7.19	.005	.85
≥ 12	8.82	2.88	10.89	2.60	3.54	.03	.75

Listening skills grade ^a							
MSS reading level	Poor comprehension		Good comprehension		<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
< 6	8.28	2.26	9.21	2.69	1.28	.13	.37
6-7.9	9.18	2.51	9.38	2.60	.05	.41	.08
8-9.9	8.24	2.41	10.13	2.37	8.24	.003	.79
10-11.9	8.93	2.45	9.43	2.54	.39	.27	.20
≥ 12	8.74	2.52	10.21	2.97	2.11	.08	.53

Note. Good ≥ 70% on the MSS; Poor < 50% on the MSS. Due to directional hypotheses, significance reported is based on one-tailed analyses. ^aWIAT-II grade-equivalent

Miranda warning reading levels must be considered in relationship to defendants' measured reading abilities. Although it seems compelling that defendants cannot comprehend information that is above their reading

capacities, this issue has not been addressed in previous research. To examine this within the current study, good and poor Miranda warning comprehension was examined for individuals with different levels of tested reading skills (see Table 16). For good Miranda comprehension, a gradual decrease was found for defendants with reading comprehension levels at or above 10th grade. In contrast, a marked decline in the percentage with good comprehension was found for warnings with reading levels at or above eighth grade.

Table 16

Miranda Comprehension for Defendants with Above and Below Average Reading Skills at Each Level of MSS

MSS reading level	Above average reading skills		Below average reading skills	
	% Poor Comprehension	% Good Comprehension	% Poor Comprehension	% Good Comprehension
< 6	12.9	48.4	20.0	34.3
6.0 – 7.9	12.9	54.8	11.4	40.0
8.0 – 9.9	19.4	29.0	45.7	5.7
10.0 11.9	16.1	25.8	31.4	5.7
≥ 12	32.3	12.9	42.9	5.7

Note. % Good = participants with good comprehension (i.e., ≥ 70% correct concepts on the MSS); % Poor = participants with poor comprehension (i.e., < 50% correct concepts on the MSS). High reading skills = WIAT-II reading grade equivalent ≥ 10th grade; Low reading skills = WIAT-II reading grade-equivalent ≤ 8th grade.

The most salient finding was that the number of defendants with poor comprehension was significantly greater for Miranda warnings written at or above their current level of functioning. These results also applied to good comprehension, as a majority of defendants were unable to exhibit good understanding for Miranda warnings with reading levels that exceed their abilities. Therefore, current findings indicate that defendants clearly cannot be expected to comprehend Miranda warnings with reading levels that are more advanced than their current level of functioning.

Hypothesis 5 predicted that reading comprehension scores would be moderately related to listening comprehension scores. The Pearson's correlation revealed a moderately high relationship ($r = .63, p < .001$) between defendants' reading and listening comprehension skills, which is consistent with that found by Carlile and Felbinger (1991).

An unexamined issue is whether the relationship between reading and listening skills would remain for borderline IQ (i.e., < 85) and average IQ (i.e., > 95) groups. On this point, Hypothesis 6 predicted a weaker relationship for the borderline IQ group than the average IQ group. The differences in correlations were dramatic with a moderately high relationship for the average IQ group ($r = .65, p < .001$), and a negligible relationship for the borderline IQ group ($r = -.07, p = .78$). Using Fisher's Z-test, this difference between correlations was statistically significant ($Z = 2.91, p = .004$). Overall results indicate that defendants will rarely exhibit listening skills that parallel their reading skills, although this is especially

true for intellectually challenged defendants. Therefore, it is critical that listening and reading abilities are considered independently when determining a defendant's competency to waive rights.

Table 17.

Correlations Between Educational Abilities and Comprehension for Oral and Written Miranda Warnings

Comprehension domain	Oral warnings				Written warnings			
	Borderline IQ		Average IQ		Borderline IQ		Average IQ	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Reading comprehension ^a	.06	.81	.38	.02	.11	.62	.10	.57
Listening comprehension ^a	.10	.67	.28	.10	.07	.78	-.01	.96

Note. Borderline IQ = participants with FSIQ < 85; average IQ = participants with FSIQ > 95. ^aWIAT-II age-based standard scores

Based on a single Miranda warning, previous research indicated that specific cognitive skills, such as intelligence and reading and listening abilities, are related to Miranda comprehension. However, no studies have investigated whether this relationship is consistent across IQ groups for representative Miranda warnings. Therefore, the current research examined relationships of specific cognitive variables to Miranda comprehension for defendants with both borderline and average intelligence via Pearson's correlations. Specifically, the relationship of reading and listening comprehension was examined for each of the following categories of Miranda warnings: (a) oral warnings, (b) written

warnings, (c) easy reading levels, and (d) difficult reading levels, (see Table 17 and Table 18).

Table 18.

Correlations Between Educational Abilities and Comprehension for Easy and Difficult Miranda Warnings

Comprehension domain	Easy warnings				Difficult Warnings			
	Borderline IQ		Average IQ		Borderline IQ		Average IQ	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Reading comprehension ^a	.35	.12	.27	.10	-.08	.73	.10	.43
Listening comprehension ^a	.28	.22	.11	.50	-.12	.60	-.01	.63

Note. Borderline IQ = participants with FSIQ < 85; average IQ = participants with FSIQ > 95. Easy warnings = Flesch-Kincaid reading level < 8th grade; difficult warnings = Flesch-Kincaid reading level > 10th grade. ^aWIAT-II age-based standard scores

Surprisingly few significant correlations were observed for any versions of the Miranda warnings. This overall pattern of correlations further supports the fact that defendants differ in how their cognitive skills are related to Miranda comprehension. For defendants with average intelligence, oral Miranda comprehension was moderately correlated with reading and listening comprehension. Interestingly, this relationship did not apply for borderline functioning defendants. Reading and listening comprehension were moderately correlated to comprehension of easy Miranda warnings, regardless of intelligence, with the exception that listening comprehension was only slightly

related to Miranda comprehension for intellectually average defendants. In contrast, comprehension of warnings with difficult reading levels was not significantly related to either reading or listening abilities. This finding provides some support that a floor effect occurs for comprehension of Miranda warnings with difficult reading levels. In other words, these warnings are too difficult for many defendants to comprehend, regardless of intelligence, or reading and listening comprehension levels.

For Hypothesis 8, reading and listening were examined as predictors of Miranda comprehension for oral and written Miranda administrations. The first analysis focused on predictors of oral warnings. Unexpectedly, reading comprehension was the only variable entering the regression ($R = .33$). The overall relationship was significant, $F(1, 91) = 11.36, p < .001$, accounting for 11% of the variance. A second analysis examined predictors of written Miranda warning comprehension. Interestingly, neither reading nor listening comprehension entered the regression when comprehension of written warnings was the criterion variable. A possible explanation for this unexpected finding is that the current study examined predictors of Miranda comprehension for the entire sample, which does not account for intellectual abilities. Therefore, any differences may have been masked due to the considerable differences in correlations between defendants with average and borderline intelligence that were discussed in the previous paragraph.

Supplementary Analysis

A major thrust of the current study was to systematically examine potential determinants of good and poor Miranda comprehension. To further explore the relationship of specific facets of Miranda-related abilities, participants were categorized into two groups according to MSS scores: poor understanding (MSS < 50%), and good understanding (MSS \geq 70%). In maintaining a similar number of defendants across groups, a further analysis of good and poor Miranda comprehension could only be completed for warnings at a moderate (8th to 10th grade) level of reading difficulty.

Defendants with poor Miranda comprehension on moderately difficult warnings (grade 8.0-9.9) exhibited significantly lower abilities for all cognitive variables than those with good comprehension (see Table 19). As expected, the largest differences were found for Miranda relevant verbal skills, such as verbal IQ ($d = .70$), reading comprehension ($d = .80$), and listening comprehension ($d = .79$).

Interestingly, the level of education did not differ between groups achieving good and poor Miranda comprehension. As found by Greenfield, Dougherty, Jackson, Podbody, and Zimmerman (2001), years of education do not correspond to academic achievement. A closer analysis of the current data suggested that defendants often exhibit reading and listening skills much lower than the highest grade they completed. As an example, 71.8% of defendants reported their level of education at or above 12th grade. Despite completing

Table 19

Differences Across Demographic and Cognitive Variables for Defendants Obtaining Good and Poor Comprehension for Moderately Difficult (grade 8.0 – 9.9) Miranda Warnings

Variable	Good comprehension			Poor comprehension			F	d
	M	SD	Range	M	SD	Range		
Education	12.50	2.22	9-20	11.76	2.50	8-20	1.27	.03
Prior arrests	7.86	21.27	1-100	6.79	5.69	1-25	.08	.07
Verbal IQ	93.95	10.53	71-121	86.58	10.59	70-115	6.44	.70*
Vocabulary	45.05	9.29	25-66	39.61	8.42	21-62	5.07	.61*
Similarities	46.82	6.44	32-60	42.00	9.12	21-57	4.60	.61*
Performance IQ	98.50	11.29	61-111	90.82	11.11	70-110	6.23	.69*
Full Scale IQ	95.91	10.88	63-119	87.27	9.50	72-105	9.71	.65**
Reading skills ^a	89.23	16.83	67-117	76.94	13.94	59-111	8.66	.80**
Reading grade ^b	10.24	2.37	6.5-13	8.09	2.47	3.6-13	10.29	.88**
Listening skills ^a	93.68	12.27	71-109	84.21	11.77	65-113	8.26	.79**
Listening grade ^b	10.13	2.37	5.5-13	8.24	2.41	4.5-13	8.24	.79**

Note. % Good = participants with good comprehension (i.e., $\geq 70\%$ correct concepts on the MSS); % Poor = participants with poor comprehension (i.e., $< 50\%$ correct concepts on the MSS). ^aWIAT-II age-based standard scores. ^bWIAT-II grade equivalent. *significant at $p < .05$. **significant at $p < .01$.

the 12th grade, their average reading and listening levels were only at ninth grade. Less than one third of these defendants exhibited comprehension levels that parallel the highest level of education they completed. Clearly, a high school education does not mean defendants can comprehend Miranda warnings written

at equivalent (i.e., 12th grade) reading levels. These findings suggest that defendants' reading and listening comprehension is approximately three grades lower than expected based on their educational levels.

CHAPTER 4

DISCUSSION

The Supreme Court's reasoning in *Miranda v. Arizona* (1966) emphasized the protection of constitutional rights of all custodial suspects subjected to interrogation procedures. Its ruling forbids the admissibility of suspects' statements "unless it demonstrates the use of procedural safeguards effective to secure the Fifth Amendment's privilege against self-incrimination" (p. 444). The result of the landmark *Miranda* decision is that suspects must be advised of their rights, and willingly relinquish them, before any interrogation. As an additional safeguard, the Court mandated that any valid waiver of rights must be knowing, intelligent, and voluntary.

Regarding the basis of the Court's decision to require routine *Miranda* warnings administrations, they clearly articulated that "only through such a warning is there ascertainable assurance that the accused was aware of his right" (*Miranda v. Arizona*, p. 472). Legal scholars (Cloud, Shepherd, Barkoff, & Shur, 2002; Weisselberg, 2008) found no evidence to suggest that such a system of warnings and waivers could actually provide additional protection as the Court expected. The *Miranda* decision was based on the assumption that advising suspects of their rights to silence and counsel ensures they have a complete understanding of these rights. For several decades, the Court's

assumption that Miranda warnings are effective at “informing accused persons of their right to silence, and in affording a continuous opportunity to exercise it” (*Miranda v. Arizona*, p. 444) was left unquestioned. In recent years, researchers and legal scholars have questioned whether the warnings fulfill their intended purpose as a result of empirical findings regarding the practical effectiveness of the Miranda administrations. Some of the resulting criticisms are discussed in the following paragraphs.

The entire Miranda decision rested on the assumption that defendants would actually seek legal assistance if they were sufficiently aware of this right (Godsey, 2006; Weisselberg, 2008). The Supreme Court emphasized the presence of counsel is “indispensable to the protection of the Fifth amendment privilege” (*Miranda v. Arizona*, 1966, p. 469). It seemed intuitive that suspects who are clearly informed of their rights and the dangers of self-incrimination would logically seek legal counsel. However, empirical data suggest the opposite is true. It is well-documented that waivers are secured without the benefit of counsel in an overwhelming majority (i.e., approximately 80%) of custodial interrogations (Kassin et al., 2007; Leo, 1996; Leo & White, 1999; Moston, Stephenson, & Williams, 1993). As a result, most custodial suspects do not benefit from legal counsel. While the Court’s assumption seems logical, these findings strongly suggest that reading or hearing a Miranda warning has little influence on suspects’ waiver decisions.

Suspects who waive their rights outside of legal consultation may not realize the importance of their decision or potential consequences of their resulting statements made to law enforcement. Gudjonsson (2003) reported that about half of suspects who relinquish their rights subsequently provide a confession. The accuracy of suspects' inculpatory statements cannot be taken for granted, in light of Kassin and Keichel's (1996) and Gudjonsson's findings that people often confess to crimes they did not commit. Confessions, regardless of their accuracy, have major consequences when introduced as evidence in court. In fact, Wrightsman and Kassin (1993) estimated that 50% of criminal convictions are based solely on confessions. Moreover, Oberlander Goldstein, and Goldstein (2003) reported that a confession is the most salient factor for predicting a guilty verdict. Due to the severe consequences of confessions, the practical application of Miranda rights has become increasingly scrutinized in the legal and social sciences literature as well as in forensic practice (Helms, 2003).

Surprisingly, the validity of Miranda waivers is rarely questioned (Rogers, Rogstad, & Blackwood, 2009) despite their dire consequences for both guilty and innocent suspects. Once the warnings are given and a suspect agrees to talk, it is generally assumed that a waiver is knowing, intelligent, and voluntary. The Court has noted that "an express written or oral statement of a waiver of the right to remain silent or of the right to counsel is usually strong proof of the validity of that waiver (*North Carolina v. Butler*, 1979, p. 373)." Furthermore, Maltzman, Spriggs, and Wahlbeck (2000) provided empirical data indicating that Miranda

waivers are infrequently overturned. They reviewed Miranda waiver cases from 1969 to 2000 (162 cases), and found that Miranda waivers were upheld 72% of the time. Even when the validity of a waiver is questioned, a large majority of Miranda waivers are determined to be valid. As noted by Rogers, Shuman, and Drogin (2008, p. 5), the implicit assumption here is that “everyone understands” Miranda warnings.

One explanation for this strongly held belief that everyone understands Miranda rights is that most defendants affirm their understanding of the warnings when asked whether they understand (Rogers, 2008). If a suspect listens to Miranda warnings, confirms their understanding, and indicates a willingness to talk to law enforcement agents, can there be any real question of whether the waiver is knowing and intelligent? Based on defendants’ self-appraisal of their understanding, the conclusion that everyone understands their Miranda warnings appears reasonable. It seems counterintuitive that suspects would claim understanding of such critical information if they do not have a good grasp of the information. However, results from the current study and previous Miranda-related research challenge this fundamental assumption of Miranda’s framework.

Among other criticisms, legal scholars have emphasized that the Miranda Court’s decision involved the implicit factual assumption that if suspects are read Miranda warnings, they would adequately comprehend their rights and be capable of making a rational decision regarding the waiver of those rights (Cloud et al., 2002; Weisselberg, 2008). According to Cloud and colleagues, the

practical effectiveness of the warnings relied on two additional assumptions: suspects can understand both the meaning and the legal significance of the warnings. Without this assumption of understanding, they argued that the warnings could not logically serve as the predicate for a knowing and intelligent waiver. Contrary to this assumption, research indicates that many custodial suspects waive their rights without understanding a significant amount of the critical information communicated in Miranda warnings. Rogers (2008), for example, recently tested university students' knowledge of Miranda rights using a brief true/false questionnaire (i.e., Miranda Quiz; Rogers, 2008). He found that 63.8% had two or more misconceptions about their Miranda warnings.

More recently, Rogers' Miranda Quiz was used to test and compare common Miranda misconceptions in a university student sample and a recently arrested defendant sample (Rogers et al., 2009). A majority of both students (58.7%) and defendants (68.6%) failed to understand at least three of the five Miranda components. Furthermore, very few students (5.1%) or defendants (1.4%) obtained a perfect score on all components. Surprisingly, they found only small differences between the two groups. Even individuals with averaging two years of college education frequently exhibit multiple flaws in their Miranda understanding, which is the basis of the Constitutional protections. In fact, Rogers (2008) estimated that at least 318,000 suspects each year waive their legal rights without comprehending even half of the substantive content communicated in Miranda warnings. For this remarkable number of custodial

suspects, Miranda warnings can be considered ineffective as a procedural safeguard.

To ensure suspects are sufficiently aware of their rights, the Court in *Miranda v. Arizona* (1966) required the now famous Miranda warnings, or other “fully effective” (p. 444) alternatives. They may have anticipated that a Miranda warning communicating suspects’ rights would provide a uniform solution (Godsey, 2006). In other words, they assumed a cursory reading of the rights would be sufficient to adequately educate most suspects. Cloud and colleagues (2002) argued that under the Miranda Court’s conception, a “one size fits all” (p. 516) approach is sufficient. They argued that such an approach involved an implicit assumption about the capacities of defendants. The Court expected that defendants will have the requisite levels of cognitive and social competence necessary to understand and implement the warnings. Rogers (2008) has similarly warned against making erroneous assumptions about defendants’ basic Miranda knowledge, considering many individuals hold inaccurate conceptions regarding their legal rights.

The fact that a suspect was read his Miranda rights does not mean that the individual comprehends their meanings (Helms & Holloway, 2006). Additionally, Rogers (2008) reviewed empirical findings indicating suspects often overestimate their level of Miranda understanding. Based on these two findings, neither routine Miranda warning administrations nor defendants’ assertions of understanding should be taken as sufficient evidence that the warnings are

effective. Instead, the level of defendants' basic knowledge and understanding of Miranda warnings is a fundamental element in examining the effectiveness of Miranda's intended protections. A critical question for attorneys, judges, and researchers is whether criminal defendants have the necessary understanding of their rights to provide a "knowing" waiver as required by Supreme Court standards.

Overall Comprehension of Miranda Warnings

The most basic capacity required for "knowing" Miranda rights waivers is an understanding of the words and phrases conveyed in Miranda warnings (Grisso, 2003). The current research examined this capacity, and the results revealed that a substantial number of recently arrested defendants waive their Miranda warnings without this necessary understanding. Using a low benchmark for good comprehension (i.e., $\geq 70\%$), over half (56.2%) of the criminal defendants did not exhibit adequate understanding of even the most easily understood Miranda warnings. On average, the pretrial defendants comprehended only about two-thirds of ($M = 66.3\%$) of these Miranda warnings. This moderate level of comprehension further supports Rogers (2008) conclusion that a substantial number of Miranda waivers are insufficient according to the Supreme Court's "knowing" standard.

Some broad comparisons regarding basic Miranda understanding can be made with findings from research on Grisso's (1998) Miranda comprehension measures. Based on his normative data, 19.2% of adult offenders exhibited poor

overall Miranda comprehension. In contrast, about twice the percentage (40.6%) in the current study had poor comprehension for Miranda warnings with reading levels comparable to Grisso's *Comprehension of Miranda Rights* (CMR) instrument. His Miranda warnings are written at approximately an eighth grade level of reading difficulty. However, individual Miranda components of Grisso's CMR vary considerably from 4th to 12th grade. Therefore, overall comparisons between the CMR and MSS are unwarranted. Because of this variability, each of Grisso's CMR Miranda components is examined with comparable MSS components from the current study.

An analysis of individual Miranda components revealed both similar and discrepant findings when the current findings are compared to Grisso's (1998). The same general pattern was observed between the studies for comprehension of the first two components. In both studies, a small percentage had failed comprehension for the right to silence (5.4% vs. 2.0% failed) and that statements will be used as evidence against them (8.9% vs. 12.0% failed). For the third component, the right to legal counsel, both studies found it is the most difficult to comprehend. However, the failure rate was more than twice as high in the current study (34.0%) than Grisso's offender sample (15.3%). The largest discrepancy was observed for the fourth component, the right to free legal services for indigent defendants. Only 4.4% of Grisso's sample failed this component versus 24.0% in the current research. One plausible explanation for these discrepancies is that the current study used recently arrested defendants in

a custodial setting. Compared to Grisso's sample of probationers, defendants in the current study may be more impaired as a result of the stressful conditions surrounding their arrest.

Analysis of Individual Miranda Components

Miranda warnings are ineffective as protective devices unless custodial suspects have adequate knowledge regarding each of the Miranda warning components (Godsey, 2006). An understanding of only a portion of the warnings would conflict with the Supreme Court's decision (Helms & Holloway, 2006). Godsey (p. 789) described suspects' failure to comprehend a single Miranda component as "tantamount to removing a brick from a dam, as it would cause the protective barrier to crumble and render the warnings ineffective." A notable 23.2% of offenders in Grisso's (1998) normative data, and 41.7% of recently arrested defendants in the current study did not meet the minimum criteria necessary to knowingly waive their rights. These findings make a strong case that many suspects fall short of knowing and intelligent Miranda waivers due to their failed understanding of at least one critical Miranda component. Because every component communicated in Miranda warnings is fundamental to a defendant's overall capacity to provide a competent waiver decision, the following paragraphs examine the individual components in light of current findings.

The first Miranda component communicates that custodial suspects have the right to remain silent. Past research has consistently demonstrated that the

right to silence is the easiest Miranda component to comprehend, regardless of age (Grisso, 1998), intelligence (Everington & Fulero, 1999), or psychological impairment (Cooper & Zapf, 2008). As with previous studies, the current research revealed that this component yields the highest levels of comprehension among the five Miranda components. As noted, very small percentages failed to recall their right to silence. Notably, all defendants who failed this component in the current study exhibited intellectual impairments (i.e., IQ < 85).

According to Godsey's (2006) analysis of Miranda, the first component should convey two basic concepts. Custodial suspects must be made aware of (a) their fundamental "right" to silence, and (b) the consequences of asserting their rights (i.e., stop questioning). Most defendants can accurately paraphrase their right to silence. However, a critical question is whether they conceptualized "right" as a constitutional protection or merely a choice (Godsey; Rogers & Shuman 2005). Findings from past studies (Grisso, 1981; Rogers, Harrison, Shuman, Sewell, & Hazelwood, 2007) illustrated that defendants will often misunderstand this core concept of their right to silence. Consequently, many custodial suspects do not grasp the basic fact that there is no penalty for invoking silence. Rogers, Harrison, Hazelwood, and Sewell (2007) reported that 21.6% of mentally disordered offenders mistakenly believed that their silence could be used against them. This common misconception is not specific to mentally disordered offenders. Rogers and colleagues (2009) found an even larger percentage of students (35%) and defendants (31%) inaccurately believed that

silence itself can be used as incriminating evidence. Despite the importance of this information, virtually no Miranda variations explicitly communicate that this right is protected (Rogers, Harrison, Shuman, et al.; Rogers, Hazelwood, Harrison, Sewell, & Shuman, 2008). Even when the warnings in the current study clarified the nature of the word “right,” 54.3% defendants failed to understand this concept. A reasonable conclusion from these findings is that defendants generally have a basic awareness of their right to silence, but often do not have accurate knowledge regarding what it means to have a right, much less what it means to waive it.

Shifting attention to the second purpose of this component, Godsey (2006) concluded that custodial suspects must know about the consequences of asserting their rights to silence. For statements to be admissible, the Supreme Court clearly articulated that interrogation must end immediately once a suspect asserts these legal rights (*Miranda v. Arizona*, 1966). Rogers and colleagues (2009) recently reported that 33% of students and 38% of recently arrested jail detainees had inaccurate knowledge of this fact. They falsely believed that even if a request for an attorney is made, questioning can continue until the attorney arrives. In this case, the right to silence does not occur until a lawyer is present.

This common misconception is not surprising, considering that Miranda warnings infrequently address this fact directly. Rogers, Hazelwood, Harrison, and colleagues (2008) reported that most Miranda warnings omit this critical detail. Based on this finding alone, it would be difficult to assume that Miranda

warnings are effective in communicating this advantage of asserting the right to silence. Moreover, the current study revealed a substantial 43.8% of defendants failed to understand this facet of Miranda, even when it was specifically communicated in the warnings.

In the second Miranda component, suspects must be warned that if they waive the right to remain silent, any resulting statements will be used as incriminating evidence in their prosecution. The purpose of this component is to (a) clarify the adversarial nature of the interrogation, and (b) warn suspects of the consequences of speaking (Godsey, 2006). Regarding the first purpose, Miranda warnings do not attempt to clarify the adversarial nature of the proceedings or that the police may not have the defendant's best interest in mind. In contrast, all warnings include a statement regarding the probable consequences of making a statement (i.e., self-incrimination). Consistent with past research, current results indicate that most defendants (88.5%) understand that their statements can be used against them. However, about half of defendants in the current study missed the concept conveying the context in which their statements can be used (i.e., court proceedings). Furthermore, previous research by Rogers and colleagues (2009) revealed two additional common misconceptions about this component. A substantial minority of defendants believed that a waiver must be signed to be valid (22%), or that statements made "off the record" could not be used against them (36%).

Suspects' right to legal counsel is conveyed in the third Miranda warning. Consistent with past research (Cooper & Zapf, 2008; Everington & Fulero, 1999; Grisso, 1998; Helms & Holloway, 2006), current findings indicated that comprehension of the right to counsel is considerably more difficult relative to other Miranda components. However, this component was even more problematic for defendants in the current study than in past research. This component is generally complex, conveying several attorney-related concepts, which likely contributes to its lack of comprehensibility. In the current study, defendants typically recalled the basic concept of the right to an attorney, but frequently missed other concepts related to the attorney component. These concepts included (a) timing of access to attorney (e.g., before and during questioning), (b) function of the attorney (e.g., represent the defendant), and (c) type of consultation allowed (e.g., talk privately).

The fourth warning addresses free legal services for indigent defendants. Previous research identifies that this component is generally the easiest relative to other components. In the current research, this component was one of the most difficult components, with defendants recalling only half the concepts related to this component (M percent concepts correct = 52.15). As examined later, intelligence may contribute to the differences in findings. Additionally, findings may be different due to language differences (e.g., reading level, length, and content) in representative MSS warnings compared to the single CMR (Grisso, 1981, 1998) Miranda version used in previous research.

The free legal services component often contains complex vocabulary such as “indigent” that is problematic for most defendants. In fact, Rogers and colleagues (2009) found that a majority of both educated college students (51.3%) and recently arrested defendants (53.0%) believed the term “indigent” is synonymous with the term “indicted”. Regarding legal services for indigent defendants, MSS Miranda warnings with three levels of reading difficulty conveyed that defendants are not financially responsible for their court-appointed counsel. A majority of the recently arrested defendants still did not accurately recall this information for components with reading levels at 6th (78.1%), 8th (65.6%), and 12th (74.0%) grades. Interestingly, the reading level of this component seems unimportant considering this concept was most frequently missed for even the easiest warnings.

Approximately 80% of Miranda versions include a fifth component explaining that these rights can be reasserted at any time (Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al., 2008). The Court in *Miranda v. Arizona* (1966, p. 479) specified that custodial suspects’ decision to invoke these rights “must be afforded to [them] throughout the interrogation.” Rogers and colleagues (2009) tested knowledge of the legalistic phrase “withdraw your waiver” sometimes used to convey this fifth component. They found that 39% of students and 32% of defendants did not understand that this phrase means suspects can reassert their legal rights.

Current findings indicate that the continuing rights component is one of the most difficult for defendants to understand. Even for the most easily understood warnings (i.e., MSS levels 1 and 2), more than a third failed to comprehend this component. For Miranda versions with difficult reading levels (i.e., MSS levels 3, 4, and 5), the failure rate ranged from 55.2% to 66.7%. A reasonable conclusion is that suspects generally do not have accurate knowledge regarding the continuous nature of their legal rights.

Cross-Jurisdictional Variation and Miranda Comprehension

The *Miranda* (1966) Court intended to provide “concrete constitutional guidelines for law enforcement agencies and courts to follow” (pp. 441-442) in order to ensure adequate protection of criminal defendants’ rights. It was anticipated that the warnings would provide a uniform solution (Godsey, 2006). In *California v. Prysock* (1981), however, the Court asserted the exact language is of little significance, and that no specific wording is necessary to fulfill Miranda’s requirements. They argued that substance rather than specific wording is most critical in conveying Miranda rights. Going beyond differences in wording, the Court, in *Duckworth v. Eagan* (1988), considered a waiver valid, even though the given Miranda warning deviated substantially in its content. The defendant was informed of his right to an attorney in a very narrow context, “if and when you go to court” (p. 203). Citing *California v. Prysock* (p. 361), they ruled that the litmus test is whether the warnings “reasonably convey” suspects’ legal rights. Although

the substantive content of the Miranda warning was defective, the Court ruled that the knowing and intelligent standards were not violated.

Ruling that language is of little importance, the Court allowed alternative Miranda variations as long as they effectively communicated the substantive content of Miranda. Jurisdictions created their own versions of the Miranda warning, resulting in remarkable variation in complexity of language (Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al., 2008) across U.S. jurisdictions. Because of this heterogeneity, Weisselberg (2008) argued that we can no longer assume that all Miranda warning versions completely and accurately inform suspects of their legal rights. Therefore, a major purpose of the current study was to answer the following fundamental question. Do different Miranda warnings yield disparate levels of understanding? The analysis focused primarily on the relationship between Miranda comprehension and Miranda warning reading level, length, and method of administration.

Reading Levels of Miranda Warnings and Miranda Comprehension

The reading level of Miranda warnings has direct implications for defendants' capacities to comprehend the warnings. As previously observed, past research has consistently illustrated the wide range of Miranda warning reading levels across U.S. jurisdictions (Greenfield, Dougherty, Jackson, Podbody, & Zimmerman, 2001; Helms, 2003; Rogers, Harrison, Shuman, et al., 2007; Rogers, Hazelwood, Harrison, et al., 2008). These studies relied on

Flesch-Kincaid estimates to gauge the level of reading ability defendants must possess to comprehend Miranda warnings, yet almost no research has examined whether this is a reliable estimate within the context of Miranda comprehension (Rogers, Harrison, Hazelwood et al., 2007). For the current study, Miranda comprehension was evaluated for warnings with five different Flesch-Kincaid reading levels. It revealed that the reading level of a Miranda warning is critically related to a defendant's comprehension. As expected, Miranda comprehension declined as reading difficulty increased. Flesch-Kincaid reading estimates generally provide useful data Miranda warning reading level. However, consideration should be given to the finding that these reading estimates tended to underestimate the reading skills required to understand the warnings.

The effect of reading level on defendants' Miranda comprehension is a stable finding across diverse groups of criminal defendants. It was found regardless of intellectual ability or method of administration. Furthermore, Rogers, Harrison, Hazelwood, and colleagues (2007) reported a consistent pattern among offenders with moderate psychological and intellectual impairment. They found the same general effect for reading level as found in the current study. With each increase of Miranda warning reading level, the percentage of defendants with poor comprehension increased.

A critical demarcation in Miranda comprehension occurred for warnings with reading levels at the eighth grade and above. For those below the eighth grade, more than 40% of the current defendants had good Miranda warning

comprehension ($\geq 70\%$). In contrast, less than 25% of defendants in the current study and 11% of mentally disordered offenders in previous research (Rogers, Harrison, Hazelwood, et al., 2007) could muster a moderate comprehension rate of even 70% for any warnings above eighth grade. Additionally, 77.6% of the frequently missed (i.e., $> 50\%$ failed) Miranda concepts in the current research require reading abilities greater than eighth grade. It is not surprising that defendants frequently fail to understand warnings at this level considering the limited literacy skills of most inmates (Harlow, 2003). Unfortunately, Rogers (2008) noted that 69.6% of Miranda warnings require reading skills that exceed the capacity of most defendants, which is estimated at seventh grade.

The most salient finding in both Rogers, Harrison, Hazelwood, and colleagues' (2007) and the current studies was a floor effect for reading difficulty of warnings at or above 12th grade. For these warnings, 57.3% of defendants exhibited poor Miranda comprehension in the current study. Rogers, Harrison, Hazelwood, and colleagues reported higher results of 64.5% for mentally disordered defendants. Of practical importance, Rogers, Hazelwood, Harrison, and colleagues (2008) found that 2.2% of Miranda warnings used in current practices use language at this level (i.e., $\geq 12^{\text{th}}$ grade). While this is a small proportion of warnings, they observed that it could still affect a substantial number of offenders who are arrested within these jurisdictions. This conclusion is supported by current and previous research regarding the effects of abstruse language on Miranda comprehension.

Current and past (Rogers, Harrison, Hazelwood, et al., 2007) research suggest the reading level of Miranda language is important to the totality of circumstances. Courts routinely seek assistance for evaluating characteristics of a defendant (e.g., intelligence and academic skills) whose Miranda competence is under inquiry. In contrast, it is much less common to examine the reading level of the Miranda warning given (Stone, 2000). A critical question in Miranda waiver evaluations is whether defendants have sufficient reading skills to read, process, and comprehend the information communicated in the Miranda warning administered during arrest. It is surprising that the reading level of the Miranda warning is rarely acknowledged by courts considering this question is near impossible to answer without this baseline comparison. If a defendant's reading skills are significantly below that of a Miranda warning's estimated level of reading difficulty, it can be reasonably assumed that the defendant cannot comprehend the warnings. Another reasonable assumption is that Miranda warnings with difficult reading levels will generally provide faulty, inadequate, or incomplete understanding for a majority of custodial suspects, regardless of other characteristics.

Length of Warnings and Miranda Comprehension

The current study provided the first empirical evidence concerned with the effects of lengthy Miranda warning components. Although the predicted pattern for longer warnings was found for two of the three Miranda components examined, the differences were generally small and not significant. In one recent

study, Gillard and Rogers (2009) examined the relationship of Miranda warning length to Miranda comprehension. In a mock crime experiment, they compared students' comprehension of either long (228 words) or short (124 words) Miranda warning versions with similar reading levels (i.e., 8th to 10th grade). Their research participants heard or read the entire warning before Miranda comprehension was measured. Despite the difference in methodology, their findings are similar to the current study. Longer warnings were only slightly more difficult to understand. Only small nonsignificant effects were found for both oral ($d = .11$) and written ($d = .13$) Miranda warnings.

Miranda experts have addressed Miranda length from a theoretical and practical perspective. Relying on classical theories of memory capacity and information processing, Rogers, Harrison, Shuman, and colleagues (2007) estimated around 70 words as the upper limit for any hope of adequate comprehension, especially for oral Miranda warnings. They concluded warnings any longer surpass limits on an individual's ability to process orally presented information. One possibility for the current finding is that no components included in the current study exceeded 70 words. This is because the MSS measures comprehension of each Miranda component, rather than presenting the entire warning at once.

For one component examined in the current study, defendants actually had better comprehension for the longer version. This exception was the component explaining free legal services for indigent defendants. More

defendants exhibited failed understanding for shorter versions of this component, regardless of whether it was administered in oral (41.0% vs. 38.5%) or written (18.5% vs. 11.0%) format. There are at least two possible reasons for this unexpected finding. First, the shorter version used complex terminology (i.e., “indigent” versus “cannot afford”), which likely contributes to its incomprehensibility (Rogers, Hazelwood, Sewell, et al., 2008). Second, word length differences between the two versions resulted from adding a clarification clause. In this case, the longer component could have been easier to understand because it clarifies that defendants are not financially responsible for court appointed attorney fees.

Miranda warnings are typically more than 90 words long (Rogers, Harrison, Shuman, et al., 2007), which surpasses an individual’s capacity to process the information. Thus, there is a good chance that defendants will not achieve a good understanding of their rights if the entire Miranda warning is presented at once, as it typically occurs in current practices. This observation is especially critical for oral presentations. Even when examining individual Miranda components, as in the current study, defendants’ comprehension was always considerably worse for long versions when presented in oral versus written format. If the entire warning is presented orally, comprehension will be nearly impossible for most defendants.

Comprehension of the total warning has not been examined for Miranda warnings specifically, but two studies (Clare, Gudjonsson, & Harari, 1998;

Fenner, Gudjonsson, & Clare, 2002) evaluated this using the British caution, an analogue to Miranda warnings. In both studies comprehension was found to be virtually impossible when the caution was presented in its entirety. Even among police officers familiar with the information, Clare and colleagues found that the percentage of officers with good comprehension dropped dramatically from 86% to 48% when the total caution was presented at once. As expected, this is even more problematic for actual defendants who are not exposed to the caution as frequently as police. With respect to criminal suspects, Fenner and colleagues found that not a single suspect was able to understand all the components when this format was used. In comparison, comprehension was substantially improved when suspects were allowed to focus on one component at a time. For example, the number of suspects comprehending the right to remain silent increased from 20% to 76% (Fenner et al.). Clare and colleagues reported a consistent trend among the general population. In their study, 93% understood the right to silence when focusing on single components of the caution, and only 27% had a good grasp when administered at once.

Although some contradictory findings indicate longer warnings are preferable, the current analysis suggests reading difficulty and method of administration are more critically related to a defendant's potential for Miranda understanding. This conclusion is supported by the finding that the expected patterns were observed for both reading level and method of administration, despite the length of the component. Specifically, defendants had greater

difficulty understanding as the reading level of the Miranda component increased, and oral administrations were compromised for both long and short Miranda components.

Miranda Comprehension and Method of Administration

Jurisdictions are allowed to use their own methods for constructing and administering Miranda warnings, but the Supreme Court specified that any method must be “at least as effective” for advising criminal defendants of their legal rights (*Miranda v. Arizona*, 1966, p. 444). The implicit assumption that oral Miranda administrations are equally effective is found in *Thai v. Mapes* (2005), where the Court ruled that both oral and written warnings are sufficient. By allowing both oral and written advisements, the Court assumed method of administration would not differentially impair suspects’ comprehension of their Miranda rights. A major focus of the current research was to empirically evaluate whether oral Miranda administrations are “at least as effective” (p. 444) as written administrations.

As discussed in the Results section, the current findings indicate that Miranda comprehension is compromised with oral advisements. Even for the simplest warnings, almost twice as many defendants achieved good comprehension for written warnings compared to oral warnings. This trend continued for moderate and difficult warnings with even larger differences observed. Miranda warnings requiring at least a high school education for adequate comprehension were the most incomprehensible, regardless of

whether warnings were presented in oral or written format. However, oral administrations were found to be almost impossible to understand, as only one defendant achieved good comprehension of these warnings. Miranda warning reading levels are critical regardless of administration method, but perhaps even more so for orally presented warnings.

In a recent study, Gillard and Rogers (2009) evaluated comprehension of oral and written Miranda warnings in a sample of university students. Consistent with current results, they reported that oral Miranda warnings were moderately more difficult than written versions ($M = 41.05$ vs. $M = 48.29$; $d = .50$). In comparison, a much larger difference ($d = 1.07$) was found for method of administration in the current study. For oral warnings at the same reading level (i.e., 8th to 10th grade) as those used in Gillard and Rogers' research, the pretrial defendants' average comprehension was similar ($M = 49.64$). For written warnings, however, the average level of Miranda comprehension observed in their student sample was considerably lower than that of the recently arrested defendants in the current research ($M = 65.30$). Unlike the current study, they measured comprehension for the entire Miranda warning. As previously discussed, presentation of the entire warning at once generally exceeds cognitive processing, thereby reducing Miranda comprehension. Therefore, this methodological difference may be responsible for the surprisingly poor Miranda understanding among educated individuals.

An interesting finding not explained by differences in methodology is that the students (Gillard & Rogers, 2009) and recently arrested defendants in the current study exhibited similar comprehension levels for oral Miranda administrations. Comprehension of oral warnings was very poor, even when presented one component at a time in the current study. Less than one-third of the current defendants had a good understanding of any oral Miranda warnings. This finding suggests a floor effect similar to that found with respect to Miranda warning reading levels. The bottom line is that many individuals simply cannot obtain a basic grasp of orally administered Miranda warnings.

The limited listening comprehension skills of many defendants may account for the lower levels of oral Miranda warning comprehension. More than a third of recently arrested defendants in the current study had listening comprehension levels lower than eighth grade. If the same Flesch-Kincaid estimates are applied, this means that oral warnings with reading levels at or above this level are difficult to comprehend for a substantial number of suspects. Regardless of their level of listening comprehension, very few (3.3% to 13.3%) defendants were able to achieve a good understanding of any oral Miranda warnings at or above eighth grade. This result is not surprising because the average level of listening comprehension for current sample was estimated at only ninth grade. In fact, current results indicate that good comprehension of both oral and written Miranda warning versions require listening skills higher than ninth grade, regardless of their estimated level of difficulty.

From a linguistic perspective (Thompson & Rubin, 1996; Rubin, Hafer, Arata, 2000), it is expected that the defendants in the current study could have substantial difficulty comprehending oral Miranda warning versions. Extrapolating from non-Miranda research, poor comprehension generally results from higher cognitive demands required for processing of oral information (Thompson & Rubin; Savage, 2001). Additional cognitive effort is required for individuals to make inferences based on the gist of the information (Rubin et al.). The present study found that defendants with poor (< 50%) comprehension of oral warnings had significantly lower levels of functioning across all cognitive domains than defendants with good Miranda comprehension (d s range from .98 to 1.37). The one exception was for PIQ ($d = .67$), which could be expected considering it has the least relevance to Miranda comprehension. In contrast to these large differences observed for oral warnings, much smaller differences were found between good and poor comprehension of written warnings (d s range from .15 to .67). These trends parallel language experts' findings that cognitive skills are critical to good oral comprehension.

From a broader legal perspective, the complexity and comprehension of oral jury instructions has been a primary focus of past research. Jurors have considerable difficulty comprehending oral instructions, which has led some states to require written copies as a supplement the judge's oral instructions (Green & Johns, 2001). However, past research findings are inconsistent regarding whether the written supplements are helpful. Kramer and Koenig

(1990), for example, reported improved juror comprehension as a result of supplemental written instructions. In contrast, several findings (Green & Johns; Hueur & Penrod, 1989; Reifman, Guisick, & Ellsworth, 1992) indicate that the presence of written instructions have absolutely no effect on jurors' comprehension levels. In fact, Green and Johns concluded that "even when jurors are looking directly at the instructions, they sometimes lack understanding" (p. 853). They emphasized that providing individuals with a written version of such abstract concepts does not necessarily improve their level of comprehension.

Many criminal defendants each year are faced with the challenge of comprehending an oral advisement of their legal rights, considering that a majority of Miranda warnings are presented in oral format (Kassin et al., 2007). While written instructions may or may not improve jurors' comprehension of instructions, results from both Gillard and Rogers (2009) and the current study provide strong empirical evidence that written warnings are significantly easier to comprehend. These results suggest Miranda warning comprehension can be improved with written versions. The assumption that oral and written Miranda administrations are equivalent should be reevaluated. Based on these findings, a general conclusion is that oral Miranda administrations are far from being "at least as effective" as written administrations for most criminal defendants.

The Supreme Court assumed that jurisdictions construct Miranda warning versions that clearly communicate procedural safeguards (Rogers, 2008;

Weisselberg, 2008). Although the basic components are incorporated in most jurisdictions' Miranda warning versions (Godsey, 2006), the reality is that these language and administration differences may compromise suspects' comprehension of the warnings. This study and past research indicate that the reading level and method of Miranda warning administration can significantly impair defendants' understanding of the legal rights Miranda warnings were intended to convey. A substantial number of recently arrested defendants in the current study could not exhibit a basic understanding of the language used in many Miranda warnings. If communicated in a language and format that defendants cannot understand, Miranda warnings cannot serve the instrumental functions for which they are intended: ensuring that confessions are the product of knowing, intelligent, and voluntary waivers of Constitutional rights.

In summary, the language and methods used to convey defendants' legal rights are critical factors related to Miranda comprehension. Equally important, a defendant's cognitive skills play a significant role in Miranda comprehension. In fact, the remarkable variation in complexity of language and administration procedures makes a defendant's level of cognitive skills an even more critical issue. As such, this study examined variables in the cognitive domain of "knowing" Miranda waivers. Specific variables examined were intellectual functioning and reading and listening comprehension.

Miranda Comprehension for Defendants with Borderline Intelligence

The question of competence to waive Miranda rights is particularly relevant for intellectually impaired defendants. The Court, in *Coyote v. U.S.* (1967), specified intelligence as one relevant factor to consider in the totality of circumstances. However, courts have historically considered the impact of cognitive deficits on defendants' capacity to provide a valid Miranda waiver only when severe impairment is apparent (Grisso, 2003). As previously discussed (Follette, Davis, & Leo, 2007), simply relying on intellectual ability is problematic because it often underestimates the degree of impairment in suspects' functional capacities. The current study examined Miranda comprehension among defendants with borderline intellectual abilities (i.e., IQ < 85).

A salient finding is that defendants with borderline intelligence often fail to understand Miranda warnings, independent of other factors (e.g., Miranda warning reading level and method of administration). This finding is consistent with two previous studies by Cloud and colleagues (2002) and Harrison (2007). Using a multiple-choice recognition test based on Grisso's (1998) Miranda instruments, Cloud and colleagues found no research participants with borderline intellectual functioning (i.e., slightly extended range with IQs from 71 to 88) had good understanding for a knowing or intelligent waiver of rights. The average comprehension rate in this small study was 45% (range 21% to 76%). Similarly, the current study revealed that almost all (90.5%) defendants with borderline

abilities failed to comprehend at least one of the Miranda components, with an average comprehension rate of about 50%.

The pretrial defendants' Miranda comprehension in the current study is similar to results from the previous research regarding the relationship of borderline intellectual functioning to MSS Miranda comprehension. The current investigation varies from Harrison (2007) in its classification of borderline intellectual functioning. Rather than the DSM-IV-TR classification, Harrison employed a slightly broader classification to examine borderline (IQ = 70 to 89) and average (IQ \geq 90) intelligence groups. Using this, Harrison also found moderate to large (Cohen's $d = .47$ to $.83$) differences in Miranda comprehension among mentally disordered defendants. In the present study impaired defendants exhibited substantially better than expected comprehension ($M = 65.3\%$), that is much higher than reported by Harrison ($M = 49.0\%$). Surprisingly, the current defendants did not perform particularly better than the mentally disordered offenders in Harrison's study.

Current findings indicated that defendants with borderline intelligence generally exhibit poor levels of overall Miranda warning comprehension. The percentage of impaired defendants who failed all five Miranda components was almost three times higher (38.1%) than that of defendants with average abilities (13.2%). This finding is substantially higher than reported for mentally disordered defendants (i.e., 9.3%) by Cooper and Zapf (2008). A predictable pattern emerged with the percentage of defendants with borderline intellectual

functioning falling much lower than most other defendants but higher than individuals with mild mental retardation (i.e., 50%; O'Connell, Garmoe, & Goldstein, 2005).

Several previous investigations (Cooper & Zapf, 2008; Everington & Fulero, 1999; Grisso, 1998) provide a breakdown for failed Miranda components (see Table 20). In understanding these comparisons, it is important to observe that the current study utilized Miranda components with five levels of reading difficulty, whereas previous research used the Grisso (1998) Miranda warning written at the eighth grade level.

Table 20

Cross-study Comparison of Percentage of Defendants with Failed Comprehension for each Miranda Component

	Borderline Intelligence	Average Intelligence	Adult offenders	Mentally retarded	Psychologically impaired
Miranda Component	Current study	Current study	Grisso (1998)	Everington & Fulero (1999)	Cooper & Zapf (2008)
Silence	9.5	0	5.4	50.0	20.0
Incrimination	19.0	7.9	8.9	55.0	44.0
Attorney	57.1	23.7	15.3	39.0	36.0
Indigent defense	61.9	5.3	4.4	17.0	10.7
Continuing rights	66.7	31.6	----	----	----

For individual Miranda components, intellectually impaired defendants in the current study exhibited poor comprehension at least twice as often as unimpaired defendants for all five components. The same pattern regarding relative difficulty of the Miranda components was observed for both borderline and average IQ groups. Impaired defendants had little difficulty with the first two components, and substantial difficulty with components three, four, and five.

A similar pattern was found for the first two components, regarding the right to silence and protection from self-incrimination. The percentage of borderline intellectual functioning defendants with failed comprehension was much lower than either psychologically impaired or mentally retarded individuals, but higher than those with average intelligence in the current and past research. This pattern is not surprising, because defendants in the current study had less severe impairments compared to mentally retarded and psychologically impaired individuals in past research.

A somewhat different pattern emerged for the third and fourth components, regarding the right to counsel and free legal services for indigent defendants. Consistent with the pattern for the first two components, defendants with borderline intelligence failed to comprehend much more often than defendants with average abilities and those in Grisso's (1998) normative sample. Unexpectedly, the percentage of impaired defendants with failed comprehension in the current study was also higher than either mentally retarded or psychologically impaired individuals in past research. This unexpected finding

could be attributed to differences across studies in the Miranda warning versions used to test comprehension. The main difference is the number of concepts included for each component. For example, MSS fourth component includes an additional concept explaining that indigent defendants are not financially responsible for court appointed attorney fees.

The fifth Miranda component was not examined in past research because it was omitted from Grisso's (1998) measures. However, the expected pattern emerged within the current study. This component was the most difficult to understand regardless of intelligence, but the failure rate of impaired defendants was more than double (66.7% vs. 31.6%) that of defendants with average intellectual abilities. It is not surprising that this component is the most difficult to understand, considering it generally has a higher reading level (i.e., ninth grade), and is lengthier compared to the other components (Rogers, Hazelwood, Harrison, et al., 2008).

Defendants with borderline intellectual functioning frequently lack the basic reading skills essential to a knowing and intelligent waiver of Miranda rights, especially with written warnings. Everington and Fulero (1999) concluded that most mentally retarded individuals do not have the receptive language and reading levels needed to comprehend the language of Miranda warnings. The current study extends this finding to defendants with borderline intelligence. Impaired defendants exhibited marked deficits in reading comprehension (M grade = 6.17) relative to those with average intelligence (M grade = 11.25). A

substantial percentage (42.0%) had reading comprehension levels below sixth grade, and none exhibited skills above ninth grade. Because Flesch-Kincaid estimates are set at $\geq 75\%$ comprehension, individuals typically need higher levels for full comprehension (Greenfield, et al., 2001). This observation means that most Miranda warnings will be problematic for defendants with borderline functioning, because they do not have the cognitive capacity to achieve comprehension and make a knowing and intelligent waiver of rights.

The current study found the prevalence rate of borderline intellectual functioning was 21.9%, three times higher than in the general population (6-7%; American Psychiatric Association, 2000). Earlier estimates of invalid waivers (Rogers, 2008) may be serious underestimates because they do not take into account the prevalence of arrested individuals with borderline intellectual functioning. The consequences of intellectually impaired defendants' waiver decisions are serious, thus measures must be taken to ensure the validity of Miranda waiver made by such individuals.

Reading and Listening Abilities and Miranda Comprehension

Good Miranda comprehension requires sufficient reading and listening skills to process and understand the language of Miranda warnings. Current results provide further evidence that defendants' basic Miranda understanding is partially determined by their levels of reading and listening comprehension. Defendants with good comprehension have reading ($d = .79$) and listening ($d = .89$) abilities at least two grades higher than those with poor comprehension. In a

sample of mentally disordered offenders, Rogers, Harrison, Hazelwood, and colleagues (2007) reported that individuals with poor Miranda warning comprehension exhibited reading and listening abilities that were twice as low as their counterparts with good Miranda comprehension (reading *M* grade = 4.74 vs. 8.70; listening *M* grade = 5.47 vs. 10.10).

Similar to non-forensic research (Carlile & Felbinger, 1991; Savage, 2001), the current study found that listening and reading comprehension are separate constructs that are only moderately related ($r = .63$). According to Carlile and Felbinger, abilities in one modality (e.g., listening) should not be used to investigate abilities in the other modality (e.g., reading). For this reason, listening abilities must be examined separately when considering a defendant's capacity to comprehend oral Miranda warnings (Rogers, Harrison, Hazelwood, et al., 2007). Therefore, reading and listening comprehension are addressed separately in the following sections.

Two studies with juveniles (Osman, 2005; Wall & Furlong, 1989) demonstrated that defendants' reading skills predict written Miranda comprehension. Applying a broader perspective, the current study examined both methods of administration (i.e., oral or written). Results from the current study indicate that higher reading skills significantly predicted higher levels of comprehension for oral warnings. Therefore, reading skills appear to be important for Miranda warning comprehension regardless of the method of administration.

Listening comprehension is especially critical to the understanding of orally presented Miranda warnings. Listening comprehension levels were typically more than two grades higher for defendants with good than poor comprehension ($M = 10.41$ vs. $M = 7.97$). As expected, this result was not found for written Miranda administrations ($M = 9.24$ vs. $M = 9.62$). These findings suggest listening deficits are particularly detrimental to defendants' understanding of oral Miranda warnings, although listening was not a significant predictor of oral warnings in the current study.

An important issue is whether there is a minimal threshold for levels of reading and listening necessary to understand Miranda warnings. For mentally disordered offenders, Rogers, Harrison, Hazelwood, and colleagues (2007) found a threshold at or above seventh grade for reading and listening abilities for good Miranda comprehension, regardless of the warning's reading level. The current study indicated a much higher ninth-grade threshold. For the current investigation, written Miranda warnings were also included, which could account for the comparatively higher reading levels found in this study. Despite this difference, results suggest that defendants with less than average reading and listening comprehension skills will rarely achieve full comprehension of Miranda warnings.

Miranda's case law conceptualizes most suspects as rational decision makers with adequate cognitive skills necessary to understand and apply the warnings (Cloud et al., 2002; Weisselberg, 2008). This conceptualization is

fundamentally flawed for at least two reasons. First, many defendants possess limited intellectual, reading, and listening abilities that are critical to Miranda comprehension. Second, even if suspects have the necessary capacities to understand the warnings, defendants may still lack rational abilities in the context of arrests and subsequent questioning.

On the first point, the prevalence of intellectual and educational deficits is much higher among criminal defendants than in the general population. Findings discussed in the Introduction (Cloud et al., 2002; Everington & Fulero, 1995; Fulero & Everington, 1999; Harrison, 2007) provide very strong evidence that deficits in intellectual ability are strongly associated with poor Miranda comprehension. Although less researched, reading and listening comprehension are critical to a defendant's capacity to comprehend Miranda rights. Estimates of deficient reading and listening abilities among defendants are much higher than estimates of intellectual impairments. In the current study, a moderate 21.9% of defendants exhibited intellectual impairment (i.e., IQ < 85). In comparison, more than half had reading and listening deficits. The current study illustrates that the cognitive capacities of defendants are too frequently overestimated. To summarize, implicit assumptions about defendants' capacities are incorrect. The reality is that defendants often lack the requisite cognitive abilities necessary to provide a knowing and intelligent Miranda waiver.

Regarding the second flaw, even defendants with eighth grade comprehension skills often fail to comprehend the Miranda warnings as

administered in current practices. Many defendants will exhibit impaired Miranda comprehension, even for warnings with reading levels that closely approximate their measured reading and listening capacities. For example, 28.1% of defendants in the current study had reading skills at or above 12th grade, yet only 8.3% of those defendants had good comprehension of warnings at this level. The most likely explanation for this finding is the contextual factors surrounding the arrest and interrogation that are not taken into account for deriving reading estimates, such as Flesch-Kincaid. Even for defendants that do not have cognitive impairments, it is difficult to assume that most defendants will function as rational decision makers considering the stressful conditions of arrest and interrogation. It is easily seen how judgment and decision making can be compromised under the stressful conditions of interrogation.

Overall, the current results illustrate at least two critical issues. First, even mild and often overlooked deficits in cognitive abilities (i.e., IQ, reading, and listening) can compromise Miranda warning comprehension. Second, cognitively average individuals may have poor comprehension of Miranda warnings due to (a) language difficulty and method of administration, and (b) the stressful nature of arrests and interrogations. The general conclusion is the number of defendants who cannot comprehend most Miranda warnings may be much larger than previously expected. The implications are far-ranging considering 80% of criminal defendants waive their rights, and the validity of the Miranda waiver is rarely questioned outside the presence of severe and obvious impairment. These

findings illustrate the importance of propositioning (a) a further examination of Miranda's practical effectiveness, and (b) recommendations to facilitate critical improvements necessary to ensure Constitutional rights are protected.

Implications for Policy

The current results have implications for determining whether a Miranda waiver and subsequent confession was offered knowingly, and whether it is admissible in court. Judges, attorneys, and other law enforcement agents should be educated about the significant potential for invalid waivers. Increasing understanding about factors that compromise Miranda comprehension would likely decrease the number of miscarriages of justice.

In commenting on Miranda's protections, Godsey (2006, p. 825) observed "empirical research and four decades of practical experience have demonstrated that the warnings do not fully achieve their intended policy objectives." As a severe criticism, Weisselberg (2008) opined that "as a protective device, Miranda is largely dead (p. 1521)." As new insights are gained regarding the current system of Miranda warnings and waivers, experts (Godsey; Rogers, 2008; Rogers, Shuman, & Drogin, 2008; & Weisselberg) have recommended preliminary strategies for improving comprehension of the warnings. As described in the following paragraphs, the current research provides empirical support in favor of implementing these practical changes.

Improving Miranda Warning Comprehension

Linguistic analyses of representative Miranda warnings have strong potential for improving the comprehensibility of Miranda warnings. Miranda warnings are constructed without any standardized or scientific basis (Rogers, Shuman, & Drogin, 2008). Empirical research has provided clear evidence that Miranda language is highly variable. Results from the current study indicate that linguistic (e.g., length and level of reading difficulty) and procedural factors (e.g., method of Miranda administration) can significantly compromise defendants' levels of Miranda comprehension. As a result, most recommendations include various strategies for improving the language used to convey Miranda rights. Psycholegal experts such as Rogers (2008), for example, concluded that eliminating Miranda versions that are incomprehensible to a majority of defendants would be a major improvement. In addressing these "worst offenders" (p. 783), he recommended eliminating Miranda warnings based on the following criteria: (a) reading level, (b) length, (c) complexity of vocabulary, and (d) accuracy of substantive content in the warnings.

At a broad level, constructing Miranda warnings with lower reading levels could improve Miranda warning comprehension. In removing the "worst offenders" Rogers (2008) recommended the removal of the warnings that require at least a 10th grade reading level. The current study provides empirical support for their recommendation, considering Miranda versions at this level of difficulty are virtually impossible to comprehend. The number of unfamiliar words and

average sentence length are the best predictors of language difficulty (Stone, 2000). Miranda warning reading levels could be lowered by breaking longer sentences into shorter ones, and by using more common synonyms of unfamiliar legal terms.

As previously mentioned (Rogers, Harrison, Shuman, et al., 2007), lengthy and complex Miranda warnings likely surpass limits on cognitive processing. Reducing the complexity of Miranda warning language is an important step toward improving defendants' comprehension of their legal rights. Rogers, Shuman, and Drogin (2008) emphasized that as a general rule, the total Miranda warning should not exceed 125 words. They suggested eliminating complex warnings by avoiding sentences comprised of more than 20 words. For all Miranda components with four or more concepts, at least two key concepts were missed by 50% or more of recently arrested defendants in the current research. This finding indicates that reducing the complexity of Miranda warnings will likely improve the comprehensibility of the warnings.

Findings from the current research were inconclusive regarding the lengths of Miranda warnings and their comprehensibility. However, lower levels of comprehension were sometimes found for lengthier Miranda components. Therefore, no recommendations are currently presented on the length of Miranda warnings.

As previously addressed, complex Miranda vocabulary presents a formidable barrier to Miranda comprehension. Regardless of reading levels,

Miranda vocabulary is the basis to valid Miranda waivers (Rogers, Hazelwood, Sewell, Blackwood, & Rogstad, 2008). Grisso's (1998) research estimated that two-thirds of offenders lack comprehension of one or more vocabulary words. Therefore, some jurisdictions have attempted to simplify Miranda language by replacing potentially problematic vocabulary, such as "questioning" instead of "interrogation" (Oberlander et al., 2003). As a practical solution, Rogers (2008) suggested removing legalistic phrases (e.g., "withdraw your waiver") to facilitate Miranda comprehension.

In over four decades, the original content of Miranda has not been modified by the courts (Godsey, 2006). As a practical first step, defective content should be removed from Miranda warnings (Rogers 2008; Rogers, Shuman, & Drogin, 2008). In addition, comprehension of Miranda warnings could be improved by explicitly addressing problematic issues (Godsey; Solan & Tiersma, 2005). Some facets of Miranda are typically misunderstood by most defendants, regardless of their abilities. Frequently missed concepts provide a basis for which elements of the Miranda rights should be clarified. For example, Shuy (1997) suggested that Miranda warnings can be clarified in a way that facilitates increased clarity to suspects, such as informing suspects that the only person who can help them is an attorney. In addition, Godsey asserted that a new component should be added clearly informing suspects that their silence cannot be used against them. Regarding the continuous nature of their legal rights, defendants should be informed that they can invoke their rights at any time, even

if they have already agreed to talk or signed a waiver (Godsey; Rogers, Hazelwood, Harrison et al., 2008).

The method of Miranda warning administration is an important factor related to comprehension (Grisso, 2003; Frumkin, 2000; Rogers & Shuman, 2005). Oral administrations were consistently more difficult to understand, regardless of the reading difficulty of the Miranda warning. These results provide empirical support that method of administration is a critical component of Miranda comprehension, and written warnings are more effective for most individuals.

Implications for Defendants with Cognitive Deficits

Intellectually impaired defendants have lower levels of Miranda comprehension, and improvements beyond simplifying Miranda language may be necessary. In the current study, even those who exhibit borderline intellectual abilities above the traditional cut-off for classification of mental retardation (i.e., > 70) were found to have significant impairments in Miranda comprehension. Although modifying Miranda warning language is an excellent first step, this strategy is likely insufficient for these intellectually challenged suspects. While simplification of language may decrease the reading level of Miranda warnings, it is unlikely to be sufficiently simple considering the necessarily complex concepts communicated in the warnings. Additional precautions should be implemented to ensure understanding of Miranda warnings, such as self-explanations or some screening procedures regarding basic understanding of rights.

Implications for Clinical Practice

Mental health professionals routinely assist both prosecution and defense in evaluating whether suspects have adequate understanding of Miranda rights. One survey conducted by Ryba, Brodsky, and Schlosberg (2007) indicated that at least 25% of forensic psychologists reported their professional practice includes Miranda-related evaluations. Mental health professionals should be educated about procedures included in thorough Miranda waiver evaluations in order to provide quality professional services. As noted by Rogers (2008), specialized training and practice guidelines are important steps for improving Miranda waiver evaluations. A key issue is an awareness of factors associated with poor Miranda comprehension. Current results have implications for evaluating both case-specific Miranda warning comprehension and the cognitive capacities of the suspect.

The current results further highlight the importance of case-specific techniques, such as those provided by Rogers and Shuman (2005). Information about the specific Miranda warning administered, such as reading level and method of administration, are essential to evaluating a suspect's Miranda capacities. Current findings indicate that different Miranda versions result in different levels of Miranda comprehension. Therefore, a suspect's comprehension of a generic warning associated with specialized instruments cannot be used to estimate comprehension of any other versions of the Miranda warnings.

As recommended by forensic experts (Frumkin & Garcia, 2003; Helms, 2003; Rogers & Shuman, 2005), it is critical for the clinician to establish the reading level for the Miranda version administered at the time of arrest. It is necessary to examine the difference between the warning's reading level and the suspect's tested cognitive abilities. For example, administering warnings with greater than eighth grade reading levels to a suspect with borderline intellectual functioning, can clearly compromise Miranda comprehension. As noted by Greenfield and colleagues (2001), a discrepancy of two grades is significant; when found in the context of Miranda evaluations, the validity of the waiver should be questioned.

In addition to reading levels, method of Miranda warning administration is an important factor related to comprehension (Grisso, 2003; Frumkin, 2000; Rogers and Shuman, 2005). Interestingly, this study is the first to examine how method of Miranda administration affects comprehension of representative Miranda warnings. The results provide strong empirical support that oral administrations contribute to poor Miranda comprehension regardless of the warning's reading level. As such, it is critical to evaluate a suspect's comprehension using the method of administration used at the time of arrest.

The current research has direct implications for examining Miranda relevant cognitive capacities, such as intelligence, and reading and listening comprehension. Overall results, consistent with previous research, indicate that impaired intelligence is strongly related to poor performance on measures of

Miranda comprehension. However, results from the current study suggest that even defendant's who do not meet the threshold for mental retardation may exhibit significantly impaired Miranda-related abilities. A related issue is that defendants often have significant impairments in reading and listening comprehension, although they do not exhibit significant impairments in intellectual ability. Therefore, results from the current study provide additional support for Rogers and Shuman's (2005) recommendation that specific Miranda-related abilities should be systematically evaluated and considered in Miranda evaluations. As expected, the recently arrested defendants in the current study who exhibited poor Miranda comprehension consistently scored lower on measures of Miranda-related cognitive variables. Specifically, significantly lower intellectual abilities were observed for Vocabulary ($d = .61$), Similarities ($d = .61$), Verbal IQ ($d = .70$), and Full Scale IQ ($d = .65$). Even larger differences were found for educational abilities, such as reading ($d = .88$) and listening ($d = .79$) comprehension.

Limitations

The research design for this study was intended to maximize ecological validity by using a sample of recently arrested criminal defendants. As such, the results may generalize more to the targeted population. However, the current study is limited because the defendants were not re-tested. Results from retesting defendants would be useful in evaluating retrospective assessments of Miranda waivers. Despite this limitation, the overall poor level of Miranda

comprehension found in the present study compared to previous studies suggests defendants' Miranda-related capacities are substantially more impaired recently after arrest compared to their capacities weeks or even months later. Even though defendants were usually evaluated within 24 hours of their arrest, a related limitation is that participants were not studied at the exact moment of arrest, thus cannot be equated with the conditions of arrests and interrogations.

Unlike most previous Miranda comprehension studies, the current study evaluated comprehension of representative Miranda warnings (i.e., MSS, Rogers, 2005) with different methods of administration. Despite this methodological improvement, a major limitation of both current and past Miranda comprehension research is the accuracy of Miranda related constructs. Experts have attempted to operationalize the three Miranda prongs based on case law to evaluate knowing, intelligent, and voluntary prongs of Miranda waivers. Like most legal constructs, there is not a gold standard for researchers to use in validating Miranda comprehension measures. As a fundamental improvement over past research, however, the methods used in the current study provide empirical data that are applicable to the assessment of a much wider range of Miranda warnings and waivers.

Future Directions

Continued research is needed to understand how cognitive, psychological, and situational variables affect Miranda comprehension. The scope of the current study was limited to evaluating a small range of variables related to valid Miranda

waivers. Results provide strong evidence that (a) borderline intelligence and (b) reading levels and administration method of Miranda warnings are related to level of Miranda comprehension. However, these factors do not account for contextual factors, such as prior experience with the legal system, knowledge of legal proceedings, and psychological conditions. Future research should examine variables such as substance intoxication and withdrawal, presence of psychopathology, and situational factors (e.g., length of interrogation and police demeanor).

Conclusions

A series of post-Miranda empirical findings illustrate the gap between the additional protections the Supreme Court anticipated, and effectiveness when applied in real world settings (Weisselberg, 2008). The current study focused on two broad barriers to Miranda comprehension among recently arrested defendants: (a) Miranda warning variables and (b) deficits in intellectual abilities and reading and listening comprehension. Results indicated that the Miranda warning variables, such as reading level and method of Miranda warning administration, affect levels of Miranda comprehension. Specifically, Miranda warnings with reading levels above eighth grade and oral administrations were consistently more difficult to understand, regardless of other factors. For cognitive impairments, current findings suggest that borderline intelligence and deficits in reading and listening comprehension contribute to poor levels of Miranda comprehension.

Courts routinely seek assistance for evaluating characteristics of a defendant (e.g., intelligence and academic skills) whose Miranda competence is under inquiry. In contrast, it is much less common to examine the reading level of the Miranda warning given (Stone, 2000). Current and past research findings suggest the reading level of the language used to communicate Miranda is important data for consideration in the totality of circumstances. Deficits in reading comprehension substantially compromise defendants' understanding of Miranda warnings, because defendants cannot be expected to comprehend Miranda warnings with reading levels that exceed their educational abilities. Current findings indicate that less than one-fourth of defendants had a good understanding of any Miranda warnings with reading levels at or above eighth grade. Comprehension plummeted for warnings with the most difficult reading levels ($\geq 12^{\text{th}}$ grade), with defendants typically understanding only 50% of these warnings.

In contrast to reading levels, a defendant's comprehension of oral information has received minimal attention in both research and clinical practice. This observation is surprising considering oral administrations of Miranda are acceptable (*Colorado v. Spring*, 1986; *Thai v. Mapes*, 2005) and practiced frequently (Kassin et al., 2007) in current police practices. The high prevalence of poor listening skills combined with the high number of oral Miranda administrations is enough to consider listening comprehension as an important factor for determining whether defendants knowingly waiver their legal rights.

When a suspect's capacity to provide a knowing, intelligent, and voluntary Miranda waiver is questioned, mental health professionals may be asked to conduct evaluations and offer opinions regarding whether the suspect has the necessary level of competence to provide a valid waiver. Therefore, it is important to better understand factors that potentially impede suspects' Miranda comprehension. The implications of the current research are far-ranging. From a clinical perspective, the current research provides empirical evidence that factors, such as reading levels and methods of Miranda warning administration, are essential for evaluating the validity of Miranda waivers. Equally important, current and similar findings provide the fundamental empirical foundation for recommended policy changes to improve criminal suspects' legal protections offered by the current system of Miranda warnings and waivers.

APPENDIX A
INFORMED CONSENT FORM

University of North Texas

Title of Study: Miranda Waivers: Determinants of Comprehension and Reasoning

Principal Investigator Richard Rogers

Site: Grayson County Jail

Before agreeing to this research, you must understand its methods. This form describes the methods, benefits, and risks. It says you have the right to stop at any time. It makes no promises about the results of the study.

Purpose of the Study

Your part of the study looks at Miranda warnings used across the country. It looks at which statements are easy to understand. It looks at reading and listening. It looks at your verbal skills and any emotional problems. Each person is different. It looks at what things may affect your understanding of Miranda statements.

The study looks at how your understanding of Miranda can be affected. You will meet a researcher, who will ask me questions and give me scales to complete. It will take about 4 hours. If you remain in detention for a week, you can volunteer to repeat some of the measures; it will take less than 3 hours.

Procedures

17 measures are given. Most are brief and easy to complete. One measure looks at how well you listen and read. Two measures look at verbal abilities. Three look at emotional problems. Two ask about your drug and alcohol use. Two measures look at attention. Three look at your reactions to legal situations. One measure looks at how easy you can be influenced. Three measures look at parts of Miranda. If you gave a statement to police, a questionnaire asks for your ideas about this.

Possible risks

Most measures are used in clinical, school, and other settings. There are no known physical or emotional risks. Once in a while, subjects become slightly stressed. This is only for a short time. There is a slight chance data could be subpoenaed, but it will be anonymous.

You will **not** be asked about child abuse. If you give such information, the law requires the researcher to tell the authorities.

Benefits to Subjects and Others

You may learn things about yourself from this research. The research may help the understanding of Miranda statements.

Compensation for Participants

Fifteen dollars will be put in your account for your participation. If you volunteer and complete the retesting, you will receive another \$10.

Procedures for Keeping Research Records Private

To protect privacy, only research numbers are used on the data. All data are locked in a research room. It will only be kept for the time of the study. A list of participants will be kept that is entirely separate from the research data and cannot be connected to the research data.

Review for the Protection of Participants

This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be reached at (940) 565-3940 with any questions regarding the rights of research subjects.

Questions about the Study

If you have any questions about the study, you may contact Dr. Richard Rogers at telephone number (940) 565-2671.

Research Participant's Rights

Your signature below indicates that you have read or have had read to you all of the above and that you confirm the following:

- A researcher has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

Printed Name of Participant

Signature of Participant

Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

Signature of Principal Investigator or Designee

Date

APPENDIX B
DEMOGRAPHIC INFORMATION FORM

Research # _____

Demographic Information Form

Current date and time:

Date and time of arrest:

Gender:

Date of birth (age):

Ethnicity:

1st language:

Highest grade completed:

Marital status:

Occupation:

Last year's income:

Current charges:

Total number of arrests:

Psychiatric hospitalizations:

APPENDIX C

MSS MIRANDA COMPONENTS USED FOR LENGTH ANALYSES

1. Miranda component: Right to attorney

Long version (35 words): You have the right at this time to an attorney. You have the right to talk to an attorney before answering any questions. You have the right to have an attorney present during the questioning.

Short version (19 words): You have the right to talk to a lawyer and have him with you while you are being questioned.

2. Miranda component: Indigent defense

Long version (34 words): If you cannot afford an attorney, one will be appointed for you by the court prior to any questioning, if you so desire. The attorney will not cost you anything, the services are free.

Short version (19 words): If you are indigent and if you wish I will get you a lawyer prior to questioning without charge.

3. Miranda component: Continuing rights

Long version (44 words): If I am now willing to discuss the offense(s) under investigation, with, or without a lawyer present, I have the right to stop answering questions at any time or speak privately with a lawyer before answering further, even if I sign the waiver below.

Short version (29 words): If you decide to answer my questions now without an attorney present, you will have the right to stop answering at any time and to consult with an attorney.

APPENDIX D

ADDITIONAL STANDARDIZED MEASURES ADMINISTERED IN CURRENT
STUDY AS PART OF ONGOING PROGRAMMATIC RESEARCH FUNDED BY
THE NATIONAL SCIENCE FOUNDATION

- *Schedule of Affective Disorders and Schizophrenia-Change Version (SADS-C; Spitzer & Endicott, 1978)*
- *Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)*
- *Wechsler Individual Achievement Test 2nd Edition (WIAT-II; Psychological Corporation, 2002)*
- *Slosson Oral Reading Test-Revised (SORT-R; Nicholson, 2001)*
- *DICA Attention Deficit Hyperactivity (DICS-ADHD; Reich, 2000)*
- *Neurobehavioral Cognitive Status Examination (Cognistat; Keiran, Mueller, Langston, & Van Dyke, 1987)*
- *Visual Search and Attention Test (VSAT; Trennery, Crosson, DeBoe, & Leber, 1990)*
- *Substance Use Inventory (SUI; Weiss, Hufford, Najavits, & Shaw, 1995)*
- *Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998)*
- *Gudjonsson Suggestibility Scale (GSS; Gudjonsson, 1997)*
- *Gudjonsson compliance Scale (GCS; Gudjonsson, 1989)*
- *Gudjonsson Confession Questionnaire-Revised (GCQ-R; Gudjonsson & Sigurdsson, 1999)*
- *Atypical Presentation (ATP; Rogers, Tillbrook, & Sewell, 2004)*
- *Miranda Statements Scale MSS; Rogers, 2005)*
- *Miranda Vocabulary Scale (MVS; Rogers, 2006)*
- *Miranda Reasoning Scale (MRS; Rogers, 2006)*
- *Miranda Acquiescence Scale (MAQ; Rogers, 2006)*

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