

MIRANDA ABILITIES IN INDIVIDUALS
WITH INTELLECTUAL DISABILITY

by

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A THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Department of Psychology
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2018

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ABSTRACT

In 1966, the Supreme Court of the United States (SCOTUS) recognized a possibility that the process of arrest, as well as subsequent custodial interrogation, rendered individuals at risk for a violation of their 5th Amendment right to silence and their 6th Amendment right to counsel (*Miranda v. Arizona*, 1966). In their landmark decision, the SCOTUS mandated that, at the time of arrest, all citizens must be informed of their rights; now referred to as *Miranda* rights. However, hearing one's *Miranda* rights and understanding these rights are two very separate concepts. Individuals with intellectual disabilities have several characteristics that put them at risk for waiving their rights without understanding the associated consequences. The aim of the current study was to determine *Miranda* abilities related to recall, vocabulary comprehension, and acquiescent tendencies in a sample in individuals with intellectual disability. An additional aim was to determine as the utility of predicting these *Miranda* abilities using intellectual composites. Participants completed an intellectual assessment, as well as tasks and measures related to their *Miranda* abilities. Participants demonstrated poor recall of *Miranda* rights; however, their recall ability improved significantly immediately after exposure to *Miranda* rights. Verbal abilities most strongly predicted performance on *Miranda* recall and vocabulary measures. Intellectual abilities were not predictive of acquiescent tendencies.

DEDICATION

In memory of Megan Browning

May we all follow your example and shine brighter, laugh louder, love greater, and do better.

*For every day they die among us,
those who were doing us some good,
who knew it was never enough
but hoped to improve a little by living.*

-W.H. Auden

LIST OF ABBREVIATIONS AND SYMBOLS

SCOTUS	Supreme Court of the United States
ID	Intellectual Disability
FSIQ	Full Scale Intelligence Quotient
WAIS-IV	Wechsler Adult Intelligence Scale, Fourth Edition
SAMA	Standard Assessment of Miranda Abilities
VCI	Verbal Comprehension Index
PRI	Perceptual Reasoning Index
WMI	Working Memory Index
PSI	Processing Speed Index
MQ	Miranda Quiz
MCT	Miranda Comprehension Template
MAQ	Miranda Acquiescence Questionnaire
ACQ	Acquiescence scale of the Miranda Acquiescence Questionnaire
NAY	Nay-saying scale of the Miranda Acquiescence Questionnaire
CON	Congruent scale of the Miranda Acquiescence Questionnaire.
<i>r</i>	Pearson product-moment correlation coefficient
<i>n</i>	Number of participants in a given group
<i>N</i>	Number of participants in a given sample
<i>M</i>	Mean: The sum of a set of values divided by the number of values in the set
<i>SD</i>	Standard deviation: Value of variation from the mean

t	T Statistic: Value determining whether sample means differ
p	Probability associated with the occurrence under the null hypothesis of a value extreme as or more extreme than the other observed value
F	F statistic: Value calculated by the ratio of two sample variances
CI	Confidence Interval
df	Degrees of Freedom

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my mentor and committee chair, Karen Salekin, for her guidance and encouragement on this project. Her patience and assistance has helped ensure this project could be successful, and for that I am grateful. I would also like to thank my committee members, Frances Connors and Brad Almond, for their time, contributions, and excitement regarding this thesis. I offer my sincerest thanks to my entire committee for supporting and encouraging this project from start to finish.

Second, I would like to thank the members of my lab for everything they do for me. Kathryn, Stephanie, and Lauren are not only my lab mates, but also my dearest friends. I am immensely indebted to you all for all that you have done for this project. You all have willingly devoted time, effort, and energy to collecting data, assisting the writing process, and providing endless encouragement and comradery. Without you, none of this would have been possible. I also want to thank our undergraduate research assistants who aided in data scoring and entry.

I would also like to thank my friends for their support and encouragement throughout this process. I have had the immeasurable privilege of being surrounded by kind, generous, and supportive friends who have helped me see this project to completion. Whether it was conducting testing for this project, offering words of wisdom, endlessly cheering me on, or using their valuable time to be an irreplaceable sounding board, my friends helped lay the stones that paved my way to reaching this goal. I could never thank them enough for their invaluable friendship and support.

I also want to offer my sincerest gratitude to the Alabama Council on Developmental Disabilities for the support this organization provided¹. The Council not only provided the funding that made this study a reality, but aided the recruitment process and connected us with individuals who made it possible to complete our research. Without the Council's support, this project would not have been possible.

Lastly, I want to thank my incredible family for their support, encouragement, and love. Everything that you have done for me has allowed me to achieve my goals. Thank you for lending a sympathetic ear, offering an encouraging word, and being my biggest believers. This one's for you!

¹ The publication was partially funded through a grant from the Alabama Council on Developmental Disabilities (ACDD) provided under the Developmental Disabilities Assistance and Bill of Rights Act of 2000 (106-402). The views and opinions expressed in this publication do not necessarily reflect those of the ACDD.

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CHAPTER 1

INTRODUCTION

With an estimated arrest rate of 10,662,252 arrests per year (Federal Bureau of Investigation [FBI], 2017), the United States ranks highest in the world with regard to the percentage of individuals exposed to the legal system. For every 100,000 citizens, approximately 3,300 are arrested and subsequently *Mirandized* (i.e., read their *Miranda* rights) during a one-year period. In addition to high arrest rates, the U.S. has the highest incarceration rate in the world with approximately 6.7 million people under supervision of the correctional system (Bureau of Justice Statistics [BJS], 2016). These elevated arrest and incarceration rates suggest the United States has a large percentage of its citizens being informed of their *Miranda* rights and subsequently invoking or waiving those rights; the concern is whether these choices and the associated consequences are fully understood.

In 1966, the Supreme Court of the United States (SCOTUS or the High Court) made a landmark decision regarding constitutional rights. In the case of *Miranda v. Arizona*, the Justices ruled that necessary safeguards must be put in place to “secure the privilege against self-incrimination” (p. 444), and to provide the individual with access to an attorney to protect Sixth Amendment rights. As per *Miranda* (1966), defendants must be provided the following information²:

1. You have the right to remain silent.
2. Anything you say can and will be used against you.

² The wording may vary by jurisdiction, but the content remains the same.

3. You have the right to an attorney.
4. If you cannot afford an attorney, one will be appointed to you.
5. You can assert these rights at any time.

These rights are afforded to all citizens, but can be waived by an individual provided that the waiver was made in a voluntary, knowing, and intelligent manner. A general understanding of *Miranda* rights is necessary for an individual to meet at least two of the three prongs of a constitutional *Miranda* waiver (i.e., a waiver made in a knowing and intelligent manner). However, prior research regarding the comprehension of *Miranda* rights has repeatedly demonstrated that various members of the general population have difficulties understanding these protected, constitutional rights. It is likely that individuals with intellectual disability will show more pronounced deficits.

Existing Research Regarding Miranda Rights

Individuals in the community called for jury duty evidenced moderate familiarity with the *Miranda* rights as tested by the ability to freely recall the majority of the five *Miranda* components. Over half of the participants (i.e., 54.3%) recalled the first four components of *Miranda* (Rogers, et al., 2013); however, despite this ability to remember the *Miranda* rights, the vast majority of the general population does not demonstrate an ability to understand the same rights. Both offenders and non-offenders alike have demonstrated problems in understanding their *Miranda* Rights (Rogers, et al., 2010). Rogers and colleagues (2010) noted this finding was not surprising as a 10th grade reading level, or higher, was necessary to understand over 60 words commonly found in *Miranda* warnings (Rogers, Hazelwood, Sewell, Harrison, & Shuman, 2008). An examination of *Miranda* warnings from various jurisdictions across the nation revealed that necessary reading levels to understand the warnings, in their entirety, ranged from

at or below sixth grade to a level that required a postsecondary education (Rogers, Harrison, Shuman, Sewell, & Hazelwood, 2007b).

Reading levels above grade six are particularly troublesome as a nationwide assessment of adult literacy found that approximately 70% of prison inmates perform below the Level 2 literacy level (described as the ability to make low-level inferences based on what they read and integrate two or more pieces of location) (Haigler, Harlow, O'Connor, & Campbell, 1994). This finding remained true in the next national assessment of literacy in 2003 where only one-third of prison inmates were able to achieve above a Basic literary level (defined as “skills that are necessary to perform simple and everyday literary activities” pg. 5)) (Greenberg, Dunleavy, Kutner, & White, 2007). The results of these national surveys suggest that approximately 60 to 70 percent of individuals who come in contact with the law are likely to lack the verbal abilities which are necessary to understand the wording and meaning of the *Miranda* components.

Apart from possible difficulties with the advanced reading levels of *Miranda* warnings, the general population does not understand what rights are protected under *Miranda* (i.e. have misconceptions of *Miranda*). In both college and community samples, Rogers and colleagues (2010; 2013) found that the majority of participants did not know the right to remain silent was a protection afforded by the Constitution, and believed that remaining silent would have negative repercussions (e.g., portray guilt). Over half of these participants endorsed numerous mistaken beliefs (i.e., misconceptions) regarding *Miranda* protections: statements could be made off the record and would not be used against them, police questioning could continue after an attorney was requested, and that police are not permitted to use interrogation tactics that are designed to elicit a confession (e.g., purposeful presentation of untrue or nonexistent evidence) (Rogers, *et al.*, 2010).

The misconceptions of *Miranda* rights extend beyond a misunderstanding of the rights themselves and encompasses a lack of insight into the consequences of waiving these rights. Blackwood, Rogers, Steadham, and Fiduccia (2015) reported that 48.7% of pretrial detainees did not understand or consider that a waiver of *Miranda* rights may have long-term implications (e.g. statements made after the reading of *Miranda* rights are admissible in a court of law). Around 40% of the sample of pre-trial defendants had waived their rights in their actual cases; these individuals were noted to have demonstrated lower intellectual functioning than individuals who did not waive their rights (Blackwood, et al., 2015). Blackwood and colleagues revealed that although these individuals recognized the negative consequences in their situation outweighed the positive, decisions to waive or invoke rights were made without consideration of these consequences. Furthermore, the authors clarified that even when individuals were capable of displaying rational decisional processes, their decision regarding *Miranda* waivers diverged from their rational reasoning. The failure to weigh the potential consequences of waiving *Miranda* rights is troubling considering that studies have shown two-thirds or more of individuals, both in criminal justice settings as well as research settings, waive their *Miranda* rights (Gillard, Rogers, Kelsey, & Robinson, 2014; Kassin & Norwick, 2004; Leo, 1996; Scherr & Madon, 2013). The limited understanding of the meaning and consequences of *Miranda* and the frequency of waivers causes concern that the *Miranda* warnings fail to protect citizens' right to due process.

Factors that Impact *Miranda* Comprehension

Intelligence has been found to be highly and directly correlated with comprehension of *Miranda* rights (Everington & Fulero, 1999; Goldstein, Condie, Kalbeitzer, Osman, & Geier, 2003; Grisso, 1981; McLachlan, Roesch, & Douglas, 2011; O'Connell, Garmoe, & Goldstein, 2005; Rogers, Harrison, Hazelwood, & Sewell, 2007a; Rogers, Rogstad, Steadham, & Drogin,

2011b). Individuals with lower levels of intelligence have been found to have lower levels of comprehension and a limited understanding of the consequences of invoking or waiving their rights (Everington & Fulero, 1999; Fulero & Everington, 1995). Some cognitive abilities demonstrate strong correlations with executive functioning and the ability to think rationally (Toplak, West, & Stanovich, 2014). In *Atkins v. Virginia* (2002), the High Court gave recognition to this association and barred the use of the death penalty for individuals with intellectual disability. According to the SCOTUS,

Mentally retarded persons frequently know the difference between right and wrong and are competent to stand trial, but, by definition, they have diminished capacities to understand and process information, to communicate, to abstract from mistakes and learn from experience, to engage in logical reasoning, to control impulses, and to understand others' reactions. (p. 318).

They further noted that these individuals are at “special risk of wrongful execution... [because of the possibility that they will] unwittingly confess to crimes they did not commit.” (p. 321).

In addition to problems associated with limits of comprehension, research has shown that offenders are unaware of their deficits and show an over-confidence in their ability to understand *Miranda* rights. Rogers *et al.* (2010) found that two-thirds of defendants believed they had a “good” understanding of their *Miranda* rights, when in fact some components were failed by close to 80% of defendants. This finding was replicated in a community jury pool where participants who self-appraised their knowledge of *Miranda* as “medium to high” failed to recognize approximately one-fourth of common misconceptions as incorrect (Rogers, *et al.*, 2013). This over-confidence, coupled with the misunderstanding of *Miranda*, can lead to

defendants executing waivers based on false beliefs of the benefits and consequences associated with that decision.

Problems associated with choosing to invoke or waive rights are not limited to characteristics of the individual, but also include situational factors. The process of arrest and threat of prosecution are inherently stressful. Research has clearly demonstrated that high levels of stress are associated with decreased cognitive functioning including the ability to process and remember information, to make good decisions, and to recognize knowledge and limitations (Bargh & Thein, 1985; Eysenck, 1982, 1992, 1997; LeDoux, 1995; Reyes, Silva, Jaramillo, Rehbein, & Sackur, 2015). Participants who faced minor stressors in a mock-crime situation demonstrated a decreased ability to recall the concepts of *Miranda* before making a decision to waive their rights; in this study nearly all participants failed to recall over 40% of the *Miranda* components (Rogers, Gillard, Wooley, Fiduccia, 2011a). Scherr and Madon (2012) replicated this finding and supported the theory that increased stress results in a decreased ability to comprehend *Miranda* (Scherr & Madon, 2012). Of note, the consequence provided to the participant in Scherr & Madon's (2012) study was a conversation with a college advisor, which was still impactful enough to elicit high stress and lower recall. Situations with more serious consequences (e.g., facing capital punishment or life in prison) are likely to elicit even higher levels of stress which in turn can cause decreased recall and comprehension.

Offenders with Intellectual Disability (ID)

According by Maulik, Mascarenhas, Mathers, Dua, and Saxena (2011), individuals with intellectual disability (ID) comprise only one percent of the population however, this number is significantly higher in the prison population. Though estimates range from 0.5-1.5% (Fazel, Xenitidis, Powell, 2008) to upwards of 10-11% (Herington, 2009; Petersilia, 2000), a recent

study indicated that 7-10% may be more accurate (Hellenbach, Karatzais, & Brown, 2016). Much like the typical arrestee, offenders with ID are often more likely to come from a low socioeconomic background, with social adversities such as below-poverty income households, lower employment, and lower education (Aaltonen, Kivivuori, & Martikainen, 2011; Dickson, Emerson, & Hatton, 2005; Emerson & Haplin, 2013). Farrington and colleagues (2006), investigated conviction rates and risk factors for offending and found that low IQ is one of the top six predictors of criminal behavior in adulthood. Furthermore, it was discovered that poverty, intellectual ability, and education were among the most predictive risk factors, and some of the most difficult to change. This combination of low SES, lower education, and lower intelligence place persons with ID at risk for becoming involved in the criminal justice system, which can be problematic if an individual lacks the ability to navigate the adversarial system (Salekin, Olley, & Hedge, 2010).

In light of the importance of the protections provided by *Miranda*, and the need to make voluntary and informed decisions regarding *Miranda* waivers, it is important that individuals who work within the criminal justice system understand and respond to the needs of individuals who have limitations in cognitive ability (Hayes, 1996; Johnston & Halstead, 2000). Equal protection under the law must be afforded to all citizens, which includes those with intellectual disability. If these individuals cannot understand the system, or individuals within the system are struggling to understand them, then it is important that the system be adjusted to accommodate (Conley, Luckasson, & Bouthilet, 1992; Ebert & Long, 2008; Jones, 2007).

Susceptibility During Interrogation of Individuals with ID

As noted in *Frazier v Cupp* (1969), the police are entitled to misrepresent elements related to the alleged offense to an individual during interrogation provided the individual has

been informed of their *Miranda* rights. Although this right afforded to law enforcement was intended to assist law enforcement in procuring valid confessions, an unintended consequence was the increased likelihood that false confessions would arise when individuals with ID were interrogated. Individuals with ID are more prone to fall victim to police tactics, such as leading questions and coercion during interrogation (Clare & Gudjonsson, 1995; Everington, & Fulero, 1999; Fulero & Everington, 1995; Fulero & Everington, 2004; Hayes, 1996). Moreover, these individuals are also more likely to adapt their responses according to the feedback of the interrogator (Everington & Fulero, 1999; Gudjonsson, 2003). For example, if an interrogator offers negative feedback to a response an individual with ID has given, that individual is more likely to change their response to one that he/she perceives to be more favorable to the interrogator (Gudjonsson, 2003). Interestingly, O'Connell, *et al.* (2005) also found that individuals with ID were likely to change answers in interrogations if they received friendly feedback during the questioning. In a situation in which an individual with ID is questioned without counsel, the interrogator has a higher probability of eliciting self-incriminating and/or false evidence from the individual due to these tendencies of shifting responses based on feedback.

In addition to shifting responses during interrogation, research has shown that individuals with ID demonstrate a need to please authority figures (Fulero & Everington, 1995). According to Perske (2005), a stressful situation (e.g., custodial interrogation) causes a higher risk of eliciting false information and a higher probability of a waiver due to the need to please others. One element of this susceptibility to authority figures is the tendency to acquiesce; individuals with ID have been found to respond affirmatively to questions (Carlin, et al., 2008; Gudjonsson & Young; 2011; Sigelman, Winer, & Schoenrock, 1982) This phenomenon has been shown to be

unrelated to plausibility, as evidenced by individuals with ID answering “yes” to questions such as “Does it snow often during the summer?” (Sigelman, Budd, Spanhel, & Schoenrock, 1981). These findings highlight the concern that individuals with ID are at a significant disadvantage when placed into a custodial setting.

Research has clearly shown that the most powerful determinants of conviction is a confession (Kassin, 1997; McCormick, 1972; Wallace & Kassin, 2012); however, confessions can be coerced or false. The majority of false confessions occur within two vulnerable populations: adolescents and individuals with cognitive limitations (Drizin & Leo, 2004; Kassin, 2005; Kassin, *et al.*, 2010). The criminal justice system does provide an avenue of recourse for false or coerced confessions (i.e. a suppression hearing) in which the defense argues that the confession was obtained in a manner that violated their clients’ rights. Despite the availability of this option, attorneys rarely move forward with a motion to suppress; over 100 public defenders reported not a single motion to suppress was filed in over 22,000 cases as reported by Rogers in Rogers et al. (2010). Given the vulnerability of individuals with cognitive limitations and the likelihood that a suppression hearing will not be pursued, it is essential to protect vulnerable individuals from tactics that increase susceptibility to false or coerced confessions.

Current Study

At the time of writing, few research studies have been conducted regarding the ability of individuals with ID to knowingly, voluntarily, and/or intelligently waive or assert their *Miranda* rights. Due to differences in functioning and capabilities, it cannot be assumed that existing research is applicable or representative regarding individuals with ID. It is likely that any deficits identified with samples of individuals in the general population and those detained by law

enforcement would be magnified when evaluating individuals with ID. The current investigation provided information about the abilities of individuals with ID with regard to *Miranda* rights.

The purpose of this study was two-fold: (1) to determine levels of recall, vocabulary comprehension, and acquiescence relevant to *Miranda* rights in a sample of individuals with intellectual disability, and (2) to determine the ability of IQ, and its subsequent components, to predict *Miranda* abilities. Paired sample t-tests, McNemar's tests, and regression analyses were used to determine differences in recall, as well as the ability of the intellectual composites to predict *Miranda* abilities. The rationale for each prediction is provided below:

1. It was hypothesized there would be low free recall ability within the group and that the most frequently recalled component would be the right to remain silent (Rogers, Steadham, Carter, Henry, Drogin, & Robinson, 2016).
2. It was hypothesized there would be higher recall ability following a verbal administration of *Miranda* rights as measured by the number of components recalled.
3. The four index scores obtained from the Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) were expected to be stronger predictors of recall than the Full Scale Intelligence Quotient (FSIQ). Of those four, the Verbal Comprehension Index (VCI) and Working Memory Index (WMI) were expected to be more accurate predictors of levels of *Miranda* recall, as measured by the *Miranda* Comprehension Template (MCT) scores (Rogers, Sewell, Drogin, & Fiduccia, 2012).
4. The WMI was expected to have the strongest relationship with *Miranda* recall as measured by the MCT.
5. It was hypothesized the subtests of the WMI and VCI would be the best predictors of scores on the MCT, particularly the Digit Span and Information subtests.

6. It was hypothesized FSIQ would be a significant predictor of scores on the Miranda Vocabulary Scale (MVS) (Rogers, *et al.*, 2012), and that the composite VCI would be the strongest predictor among the indices.
7. When using subtests of the WAIS-IV to predict MVS scores, Vocabulary and Information were expected to be the best predictors of scores.
8. It was predicted there would be a strong association between the congruent content (CON) measure of the Miranda Acquiescence Quiz (MAQ) (Rogers, *et al.*, 2012) and the VCI of the WAIS-IV. Furthermore, it was expected there will be strong associations between CON scale scores and the three subtests of the VCI: Similarities, Vocabulary, and Information.
9. It was expected that the Acquiescent (ACQ) scores on the MAQ will be associated with the WMI composite score.

CHAPTER 2

METHODOLOGY

Participants were recruited through the Alabama Department of Mental Health's Division of Developmental Disabilities; an organization that provides services to individuals with ID. The sample was comprised of individuals diagnosed with ID who resided in the community in either a residential facility (e.g., group home) or with a guardian. All participants received monetary compensation for their participation in the amount of \$10 per test for a possible total of \$20. A total of 53 participants completed the study. These participants ranged in age from 18 to 64 ($M = 35.75$, $SD = 11.76$) with 54.7% ($n=29$) identifying as male and 45.3% ($n=24$) identifying as female. The majority of the sample identified as Caucasian (56.6%), while the remaining participants identified as African American (37.7%) or biracial (5.7%). Over three-fourths of the sample reported no prior interactions with police officers or the legal system (81.1%). Only 11.3% ($n=6$) of participants reported prior arrests and none of those six participants reported more than one arrest.

Measures

All measures were read aloud to participants. Participants were administered a background questionnaire, a psychological measure of intelligence (i.e., Wechsler Adult Intelligence Scale – Fourth Edition; WAIS-IV), and a battery of measures to gauge *Miranda* abilities (i.e., Standard Assessment of Miranda Abilities; SAMA).

Background Questionnaire. Participants completed a demographic questionnaire in a semi-structured interview format with questions pertaining to participant age, race, educational level, previous exposure to the legal system, among other demographic factors (see Appendix A). At the end of this questionnaire, participants were asked to freely recall the components of *Miranda*.

Wechsler Adult Intelligence Scale -IV (WAIS-IV). The WAIS-IV (Wechsler, 2008) is a measure of intelligence, composed of 10 subtests which scale onto four indices of Full Scale Intelligence Quotient: Verbal Comprehension, Perceptual Reasoning, Working Memory, and Processing Speed. These indices provide information regarding the cognitive abilities of the participant in comparison to their relevant age group. The WAIS-IV has high validation and reliability with reliability coefficients greater than .90 on each subtest (Wechsler, 2008). The WAIS-IV has a high correlation with the Stanford-Binet IV test (0.88), and other measures of the same nature. The WAIS-IV was also standardized in an ID population and provides data relative to this population. Administration time normally ranges between 60-100 minutes in length. The WAIS-IV subtest scores and composite scores were used in the data analyses.

Standardized Assessment of Miranda Abilities (SAMA). The SAMA (Rogers, *et al.*, 2012) is a battery of assessments developed to measure comprehension of *Miranda* warnings. The SAMA is composed of five tests: Miranda Quiz (MQ); Miranda Reasoning Measure (MRM); Miranda Comprehension Template (MCT); the Miranda Acquiescence Quiz (MAQ); and the Miranda Vocabulary Scale (MVS). Administration of the SAMA requires approximately 60-90 minutes. For the purposes of this study, four of the tests were administered and three were included in the analyses.

MQ: The Miranda Quiz is designed to assess common misconceptions about *Miranda* rights through a 25-item true-false questionnaire. There is strong reliability ($r=.71$) in the MQ; however, there is no construct validity because the MQ is not designed to measure a specific psychological construct.

MCT: The Miranda Comprehension Template is a measure of the participant's ability to immediately or after a delay, recall and rephrase *Miranda* rights accurately and with understanding.

MAQ: The Miranda Acquiescence Questionnaire is designed to measure the likelihood of a participant to habitually acquiesce or nay-say to logically inconsistent pairs. The MAQ is also designed to examine participants' perceptions of legal counsel, law enforcement officers, and interrogation situations and issues. There are no reliability analyses of the MAQ, as its primary purpose is to measure content inconsistency; it is not examining the consistent measure of a construct.

MVS: The Miranda Vocabulary Scale is designed to evaluate comprehension of 36 key, relevant words to *Miranda* warnings. This assessment is given to participants in a semi-structured interview format and is designed to determine the bounds of their *Miranda* abilities. There is strong interrater reliability ($r=.92$), and as a scale demonstrates high internal reliability ($r=.90$). The MVS is also highly correlated with similar measures of reading comprehension with strong convergent correlations with the Wechsler Abbreviated Scale of Intelligence (WASI) verbal abilities ($r=.72$)

Procedure

After approval from the board of directors of various local organizations and the Institutional Review Board at The University of Alabama, participants who resided in group homes and/or participated in day rehabilitation centers or advocacy groups were identified and contacted via the supervisor of the facility and/or their individual guardian. If interest was indicated by the potential participants, guardians, or supervisors, additional information was provided to explain the purpose of the study. Those who were interested were scheduled for an appointment to complete testing.

If individuals had an appointed legal guardian, consent was first obtained from the participant's legally authorized representative (see Appendix B). If the guardian consented to their ward's participation, a member of the research team met with the individual and explained the study. Individuals who indicated a desire to proceed were read the assent form and provided a copy for their reference, (see Appendix C); if interested, the individual signed the form and their participation began. For individuals who maintained their own legal guardianship, the same procedure was followed with the consent form (see Appendix D). One of the 54 individuals who enrolled in the study became visibly distressed during the administration of the background questionnaire, and participation in the study was discontinued.

At the outset of the study, a background questionnaire was verbally administered by the researchers to the participants. Following the administration of the background questionnaire, the WAIS-IV was administered. Lastly, participants were administered the four tests of the SAMA. Participants were offered frequent breaks during testing to offset any fatigue or boredom. Additionally, they were provided with the option to complete testing across numerous sessions (e.g., complete one test per session across two days). Participants were monetarily compensated

for their participation according to the number of tests (i.e., WAIS-IV and SAMA) completed at a rate of \$10 per test. All participants completed all measures.

CHAPTER 3

RESULTS

A variety of analyses were used to address the research questions. Descriptive analyses were used to determine the level of free recall in the group of participants. Next, sample comparison tests provided information regarding differences in free recall ability versus tested recall ability. Lastly, regression analyses were used to ascertain the predictability value of the WAIS-IV in predicting outcomes on *Miranda* measures. Each analysis, and corresponding research question and hypothesis, is described in greater detail below.

Descriptive Statistics

Descriptive statistics of participants' performances on the WAIS-IV and SAMA are included in Table 1. The WAIS-IV data includes the Full Scale IQ score and the four index scores. The SAMA data includes means for each of the four measures; overall scores are not calculated for the SAMA as these measures are not cumulative.

Table 1
Means and Standard Deviations of Measures

WAIS-IV (Standard Scores)			SAMA			
Variable	<i>M</i>	<i>SD</i>	Variable	<i>M</i>	<i>SD</i>	(Range)
FSIQ	50.94	8.049	MQ	7.13	3.579	0-15
VCI	58.72	7.257	MCT	1.51	1.090	0-13
PRI	59.02	8.395	CON	9.87	3.995	0-24
WMI	55.57	8.523	ACQ	9.60	6.672	0-24
PSI	55.98	8.635	NAY	4.51	4.726	0-24
			MVS	18.45	15.228	0-144

**Note.* Range refers to the possible range of scores for each SAMA measure. FSIQ=Full Scale IQ; VCI=Verbal Comprehension Index; PRI=Perceptual Reasoning Index; WMI=Working Memory Index; PSI=Processing Speed Index; MQ=Miranda Quiz; MCT=Miranda Comprehension Template; CON= Congruent Content on Miranda Acquiescence Questionnaire (MAQ); ACQ= Acquiescence on MAQ; NAY=Nay-saying on MAQ; MVS=Miranda Vocabulary Scale.

Free Recall Ability

There are five components to *Miranda* rights: (1) right to silence; (2) any statements can be used evidence in a court of law; (3) right to an attorney; (4) right to have an attorney provided if an individual cannot afford one; and (5) the right to assert these rights at any time. Participants were first coded on ability to freely recall *Miranda* rights (i.e., recall rights with no *Miranda* warning provided) at each component level, as well as the total number of rights recalled out of the possible five.

It was hypothesized this sample would demonstrate low recall ability, which was tested by conducting frequency analyses. Regarding the right to silence, 15.1% of the sample ($n=8$) freely recalled this right. Approximately 11% ($n=6$) correctly recalled that statements can be used as evidence in court. The right to an attorney and the right to have an attorney provided in the case of insufficient funds were each only correctly recalled by 4.8% of participants ($n=1$ per component). None of the participants recalled the fifth component, the ability to assert *Miranda*

rights at any time during the interrogation. Regarding total scores, 9.4% ($n = 5$) of individuals recalled one component, 7.5% ($n = 4$) of individuals recalled two components, and 1.9% ($n = 1$) recalled three components. As expected, the right to remain silent garnered the highest recall rate, but overall recall rates were low when compared to existing recall rates in samples without ID (see Rogers et al., 2013).

Tested Recall Ability

As previously described, the Miranda Comprehension Template (MCT) provides an evaluator a template to measure an individual's ability to recall the components of a *Miranda* warning. Consistent with testing procedures, the participants were provided a *Miranda* warning (see *Appendix E*) and asked to immediately recall as much of the warning as possible (hereinafter referred to as “tested recall”). To account for the wide variability in *Miranda* warnings across jurisdictions in the United States, the MCT scoring allows researchers to score subcomponents included in the *Miranda* warning separately. For example, the right to silence may include additional, specific information such as the right to not say anything, to not answer any questions, or to not make any statements; these would be scored as three different subcomponents of the overall component of the right to silence. Five raters evaluated the Tuscaloosa County *Miranda* warning and identified 13 unique subcomponents included in the warning.

In the current analyses, the subcomponents on the MCT were collapsed within their respective main component to compute a dichotomous score (i.e., “0” equals incorrectly recalled and “1” equals correctly recalled) for each of the five *Miranda* components. In other words, if a participant recalled at least one subcomponent of the right to remain silent, the overall component was scored as correctly recalled. This process was used for all five components. The

fifth component, the right to assert rights at any time, was not recalled by any participant, either freely or after a warning was provided; as such, a separate analysis of this component was not conducted.

It was hypothesized that participants would demonstrate higher recall ability following the administration of the *Miranda* warning. We tested this hypothesis on a component level by using McNemar's tests to compare each of the component scores for free recall and tested recall. The McNemar test is employed to determine whether there are differences on a dichotomous variable (i.e. recalled or not recalled) between two related groups (i.e. individuals' pre- and post-test scores). An exact McNemar's test determined the difference in the proportion of remembered components pre-warning (i.e., free recall) and post-warning (i.e., tested recall) was statistically significant for the right to silence ($p = .003$), the right to an attorney ($p < .001$), and the right to a provided attorney if indigent ($p = .008$) (see *Table 2* for descriptive data).

Lastly, the collapsed component scores of the MCT were summed to create a total tested recall score. To test the hypothesis of improved recall ability after a *Miranda* warning on an overall level, a paired samples t-test was performed to determine if there was a significant difference in total recall performance between free recall and tested recall. Participants recalled more components of *Miranda* rights immediately after a warning ($M = 1.245$; $SD = 1.090$), as compared to free recall without a warning provided ($M = .302$; $SD = .696$). This was a statistically significant increase of 0.94 recalled components, 95% CI [.671, 1.216], $t(52) = 6.947$, $p < .001$, $d = 0.95$. Overall, the data revealed significant increases in recall after the provision of a *Miranda* warning both on a component level and in total recall ability.

Table 2
Differences Between Free Recall and Tested Recall

Component	Free Recall		Tested Recall	
	<i>n</i>	<i>Percentage of sample</i>	<i>n</i>	<i>Percentage of sample</i>
Right to Silence	8	15.1%	22	41.5%
Statements Used as Evidence	6	11.3%	12	22.6%
Right to Attorney	1	4.8%	23	43.4%
Right to Provided Attorney If Indigent	1	4.8%	9	17%
Reassert Rights at Any Time	0	0.0%	0	0%

WAIS-IV as a Predictor of *Miranda* Knowledge

Preliminary analyses. Preliminary analyses were conducted to determine if the data obtained from the WAIS-IV and the SAMA violated the assumptions of a multiple regression. Standard scores (i.e., z-scores) were calculated for each independent variable (IV) and dependent variable (DV). If a z-score was more than 3.29 standard deviations away from the mean, that data point was identified as an outlier as 99% of data falls within 3.29 standard deviations. If an individual produced more than one outlier, their data was removed from that analysis; two such individuals were removed from final analyses. One individual was removed from the analyses regarding the MVS due to production of a MVS total score greater than 3.29 standard deviations, but this individual was included in the remaining analyses. Lastly, a fourth individual was excluded from the analyses using the MCT total score due to the score being an outlier. The removal of such outliers improved residual error distribution; as such, assumptions were not violated. The resulting analyses included a total sample of 50 individuals.

The original data analysis plan included the FSIQ in the multiple regressions utilizing the indices as predictors. However, as the FSIQ is derived from the four WAIS indices (i.e., the

VCI, PRI, WMI, and PSI) its inclusion resulted in high multicollinearity; once removed, the tolerance of the remaining four independent variables (IV's) increased to at least 0.20. The FSIQ was therefore excluded from the regression analyses. Of note, the literature has varied on the acceptable minimum level of tolerance from 0.10 to 0.25 (Huber & Stephens, 1993; Menard, 1995; Tabachnick & Fidell, 2001), for the purposes of these analyses, a tolerance level of 0.20 was used to control for multicollinearity while also accounting for the strong correlations between IV's. Although significant, the moderate-to-strong correlations among indices and among subtests, did not violate multicollinearity as evidenced by tolerance levels above 0.20.

Main analyses. Due to the removal of the FSIQ from the multiple regressions, separate linear regressions were conducted with the FSIQ as the sole predictor of scores on the MCT and MVS. Next, a series of multiple linear regressions was conducted to determine how well the four WAIS-IV indices, as well as the ten WAIS-IV subtests, predicted scores on the MCT, MVS, and MAQ. These analyses also served to inform of the changes in predictability between the FSIQ and the scores from which the FSIQ is derived. Multiple linear regression was selected as it permits determinations of the importance of the predictors overall, as well as the influence of each individual predictor with regard to other predictors.

Multiple regression analyses were first conducted using the entry method (i.e., all variables on one step) to determine overall significance of the model and each of the Beta weights. Next, the stepwise method was utilized to allow for parsimonious models while remaining less susceptible to multicollinearity due to the strong correlations between variables. In stepwise regression, all variables are considered for entry into the model, but only significant predictors are included in the model. The variable that accounts for the most unique variance is included on step one, the variable that accounts for the second highest amount of variance is

added on step two, and so forth until all significant predictors have been identified and included. All analyses are described below and grouped based on which SAMA measure was used as the DV.

Miranda Comprehension Template. It was hypothesized the index scores of the WAIS-IV would have greater predictability of tested recall than the FSIQ; specifically, it was expected that the VCI and WMI would be best predictors. Additionally, the WMI was expected to be the strongest predictor of the four indices. These hypotheses were tested through a simple regression, followed by multiple regressions (detailed below). A simple linear regression analysis was conducted to determine the utility of the FSIQ in predicting the MCT scores. On its own, the FSIQ significantly predicted the MCT scores, $F(1,49) = 7.809$, $p = .007$ and accounted for 13.7% of the variance in MCT scores (i.e., $R^2=.137$).

Next, a multiple linear regression was conducted to assess the ability of the four WAIS-IV index scores to predict the MCT scores. The goal of these analyses was to determine (1) how much variance these variables accounted for, and (2) how much additional variance was accounted for by the individual indices in comparison to the FSIQ. The enter method demonstrated significance for the VCI and PRI and explained 37.2% of the variance, $F(4,45) = 6.668$, $p < .001$. The stepwise model produced a final significant regression equation, $F(2,47) = 12.859$, $p < .001$ and explained 35.4% of the variance with the VCI and PRI as the only significant and included predictors (see Table 3). This final model indicated the addition of the PSI and WMI in the full enter model only accounted for an additional 2% of the variance while weakening the F -statistic.

Table 3
Regression Models Using WAIS-IV Indices to Predict MCT scores

Variable	Enter Model			Stepwise Model		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
VCI	0.129	0.037	0.627**	0.146	0.029	.711**
PRI	-0.083	0.032	-0.411*	-0.067	0.028	-.332*
WMI	0.041	0.038	0.223			
PSI	-0.006	0.038	-0.034			
R^2		.372			.354	
<i>F</i> for R^2		6.668**			12.859**	

Note. VCI=Verbal Comprehension Index; PRI=Perceptual Reasoning Index; WMI=Working Memory Index; PSI=Processing Speed Index.

* = $p < .05$. ** = $p < .01$.

Although PRI has a weak correlation with MCT scores ($r = .06$), once the VCI is considered, higher PRI scores predict lower MCT scores. In this model, the PRI scores acted as a suppressor variable, that is, a variable that is weakly related to the outcome variable and more strongly related to a predictor variable, resulting in a decrease in irrelevant or error variance in the independent variables (Cohen & Cohen, 1975; Smith, Ager, & Williams, 1992). As a result of suppression, including PRI improved the ability of VCI to predict MCT scores. In summary, higher verbal abilities predict higher tested recall ability, while higher perceptual reasoning skills predict lower tested recall ability.

The hypothesis that the Digit Span subtests of the WMI and the Information subtest of the VCI would serve as significant predictors of tested recall was examined using multiple linear regression. The 10 subtests of the WAIS-IV were first entered on the same step to determine

Beta weights and significance similar to the above analysis. The model produced an overall significant regression equation, $F(10,39) = 2.371, p = .027$ and accounted for 37.8% of the variability. In this analysis, none of the subtests were significant predictors. The data was then run using the stepwise method which produced a significant overall regression equation, $F(1,48) = 14.043, p < .001$. The stepwise model explained 22% of the variance. In this analysis, the only significant predictor was the Similarities subtest ($\beta = .476, p < .001$), which is composed of tasks requiring abstraction skills. The difference between the two models implied Similarities explained the majority of the variance with the other nine subtests accounting for 15% of the explained variability collectively. In summary, higher verbal abstraction skills indicated an increase tested recall ability and were the strongest predictor of MCT scores.

Miranda Vocabulary Scale. It was hypothesized that the FSIQ would significantly predict the participants' outcomes on the MVS, but that the VCI would be a stronger predictor. This hypothesis was tested first through a simple regression and then by multiple regressions (detailed below). A simple linear regression was conducted to discover if the FSIQ was a significant predictor of the MVS scores. The model was significant, $F(1,50) = 29.553, p < .001$, and explained approximately 36% of the variance ($R^2 = .359$).

As a follow up to the simple regression, a multiple linear regression was conducted to ascertain if the composite indices of the WAIS-IV could predict the Miranda Vocabulary Scales (MVS) scores using the enter method. The final significant regression equation, $F(4, 45) = 11.191, p < .001$, accounted for approximately 50% of the variance in the MVS scores ($R^2 = .499$). Overall, the indices accounted for 13% more of the variance than the FSIQ alone. To determine the individual influence of each index, the four IVs were run in a stepwise multiple regression model. The final model produced a significant regression equation, $F(1,48) = 42.232,$

$p < .001$ and accounted for 46.8% of the variance in MVS scores ($R^2 = .468$). The only predictor included in the stepwise equation was the VCI which accounted for approximately 47% of the variance in the MVS scores (see Table 4). Thus, the VCI by itself accounted for only 3% less variance than the full model with all four indices. Verbal abilities predicted MVS scores with higher verbal comprehension abilities translating into higher MVS scores.

Table 4
Regression Models Using WAIS-IV Indices to Predict MVS scores

Variable	Enter Model			Stepwise Model		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
VCI	2.043	0.406	0.767**	1.822	0.280	.684**
PRI	-0.562	0.356	-0.221			
WMI	0.170	0.457	0.068			
PSI	-0.038	0.443	-0.017			
R^2		.499			.468	
<i>F</i> for R^2		11.191**			42.232**	

Note. VCI=Verbal Comprehension Index; PRI=Perceptual Reasoning Index; WMI=Working Memory Index; PSI=Processing Speed Index.

* = $p < .05$. ** = $p < .01$.

Two multiple regressions were conducted to gauge the utility of the subtests of the WAIS-IV in predicting scores on the MVS with the expectation that the three subtests that comprise the VCI (i.e. Similarities, Vocabulary, Information) would be the strongest predictors. Using the entry method, the regression produced a significant equation, $F(10,39) = 5.765$, $p < .001$) and explained approximately 60% of the variance (i.e., $R^2 = .596$). The subtest scores were then entered stepwise into the regression which produced a final model with two significant

predictors: Vocabulary ($\beta = .443, p < .001$) and Similarities ($\beta = .325, p = .01$). The final regression equation ($F(2,47) = 17.566, p < .001$) accounted for 43% of the variance ($R^2 = .428$). In summary, the addition of the remaining eight subtests accounts for an additional 17% of the variance. Verbal abilities, particularly vocabulary skills and abstraction skills, strongly predict scores on the MVS.

Miranda Acquiescence Questionnaire. It was hypothesized there would be a strong, predictive relationship between the VCI score and the CON (congruent content) scale on the MAQ. Furthermore, it was predicted that strong associations between the three subtests of the VCI (Similarities, Vocabulary, and Information) and the CON score would be identified. Each of these hypotheses was tested with regression analyses. A simple regression employing the CON scale scores as the dependent variable, and overall VCI score as the predictor, revealed the VCI was not a significant predictor ($\beta = .063, p = .413$). A multiple regression examining the ability of the three VCI subtests to predict CON scores revealed that Similarities ($\beta = -.158, p = .779$), Vocabulary ($\beta = .975, p = .209$), and Information ($\beta = -.156, p = .749$) were not significant predictors of content congruency on the MAQ.

Lastly, it was hypothesized that the overall WMI score on the WAIS-IV would significantly predict acquiescence (ACQ) scores on the MAQ. Multiple regression analyses indicated none of the IVs under study were significant predictors of ACQ scores: VCI ($\beta = -.045, p = .840$), PRI ($\beta = .293, p = .150$), WMI ($\beta = .023, p = .920$), and PSI ($\beta = -.133, p = .571$).

CHAPTER 4

DISCUSSION

To date, few studies have examined the abilities of individuals with ID with regard to *Miranda* rights. To address this gap in the literature, the relationship between scores on the most widely used measure of adult intelligence, the WAIS-IV, and a well-validated measure of *Miranda* abilities, the SAMA, was examined. Additionally, the question of the predictability of scores on the WAIS-IV indices of the *Miranda* constructs, as assessed by the SAMA (i.e., recall, vocabulary, and tendency to acquiesce) was answered. Overall, results indicated verbal knowledge is most predictive of performance on the SAMA. Subtest level analyses further revealed that abstract reasoning abilities drive the relationship between verbal knowledge and *Miranda* abilities. These findings contribute to the growing body of knowledge about the impact of intellectual ability on psycholegal functioning and elucidate numerous considerations for assessing individuals with ID who interact with the legal system.

Recall Ability

As noted by Rogers et al. (2011b), free recall of *Miranda* rights can be complicated by a number of different factors including prior exposure as well as pre-existing misconceptions. Although recall does not equate to comprehension, it provides a basis for remembering relevant information which is an essential part of the process of understanding such information. It was hypothesized participants in the current study would demonstrate low free recall of *Miranda* rights. Frequency analyses supported this hypothesis, as less than one-fifth of the participants recalled more than one of the five *Miranda* components. Compared to previous research that

employed a sample without ID, the current sample's rate of free recall was much lower. Rogers and colleagues (2013) reported that greater than half (i.e., 54.3%) of their sample of community jury pool members recalled the first four components of *Miranda* rights. Only 10.7% of the Rogers et al. sample failed to recall any of the rights, whereas 52.4% of the current sample failed to recall at least one component.

Aside from cognitive impairment, it is reasonable to suspect one contributing factor to free recall ability is prior exposure. The ten individuals in this sample who recalled at least one component endorsed prior exposure to *Miranda* rights either on television or in real life. Prior exposure to the *Miranda* warning (before the study) provided individuals with the ability to recall portions of the warning; this was similar to Fulero and Everington's (1995) findings in which individuals with ID who had contact with the legal system (e.g., were on probation) outperformed similar individuals with no prior legal experience on *Miranda* measures.

Consistent with hypotheses and with the stipulation that prior exposure increased free recall, participants recalled a significantly greater number of *Miranda* components after hearing a *Miranda* warning, particularly for the right to remain silent and the right to have an attorney present. However, this finding should be considered in the context that, even with improvement, the average number of components recalled following exposure was still approximately one of five. Poor memory and impaired ability to retrieve stored information is a common feature of ID (Hulme & Mackenzie, 1992), and prior studies have indicated individuals with ID failed to recall approximately 75% of information presented to them (Clare & Gudjonsson, 1993; Everington & Fulero, 1999). Consistent with these prior studies, the current sample was unable to recall approximately 75% of the warning (i.e., recalled approximately 1.25 components out of five).

One explanation for the sample's demonstrated difficulty in recalling *Miranda* components is that many individuals with ID have difficulty recalling words that are comprised of more than two syllables (Lifshitz, Kilbery, Vakil, 2016). In addition to longer words causing difficulties, the length of the warning itself may impede recall. Rogers et al. (2007) evaluated numerous *Miranda* warnings and found the average number of words in a *Miranda* warning was 146, with some warnings including as many as 547. The *Miranda* warning used in the current study was modeled after commonly used warnings in jurisdictions across the United States and contained 82 words; despite the use of a warning that was shorter than the nation's average, participants only recalled approximately one-fourth of the information. Were the warning to increase in length, the percentage of recall may decline substantially. Ultimately, while immediate recall increases after exposure to *Miranda* warnings, the overall recall rate remains low which becomes an obstacle to comprehension.

In addition to measuring recall abilities, it is important to understand which facets of intelligence may account for recall ability. It was hypothesized that working memory and its subcomponent, Digit Span, would most accurately predict recall ability. The reasoning behind this hypothesis is that individuals who perform better on tasks of concentration and attention, as well as working memory, would perform better on tested recall given that the process of recollection relies on mental flexibility, as well as short- and long-term memory. However, this hypothesis was not supported as verbal comprehension and its subtest, Similarities, as well as perceptual reasoning were the only significant predictors. It is noteworthy that the two WAIS-IV subtests that comprise the Working Memory Index (Digit Span and Arithmetic) each involve numerical content rather than verbal content. Thus, these tests do not directly assess working memory as it pertains to words and phrases. Future studies should consider utilizing measures

that assess verbal working memory, such as the well-researched Wechsler Memory Scales (WMS) to address this issue.

Though working memory was not a significant predictor of tested recall, verbal comprehension and perceptual reasoning emerged as significant predictors. Verbal abilities are likely related to recall for individuals are more likely to remember stimuli when concurrent comprehension exists. Without existing verbal fluency, many of the *Miranda* words may be too difficult for individuals to recall, which is why facets of intelligence that rely on verbal reasoning demonstrated the strongest predictive abilities of recall. As previously noted, the negative relationship between perceptual reasoning skills and recall was unexpected. This relationship can be explained in the framework of a suppression effect: controlling for perceptual reasoning scores' impact on recall ability strengthens the relationship between verbal comprehension and recall. Participants performed similarly on tasks of verbal comprehension and perceptual reasoning; however, the reverse effect these two composites have on recall may be explained by perceptual reasoning skills' reliance on visual stimuli. Those who performed better on perceptual reasoning tasks may rely more heavily on visual stimuli and may be less attentive to strictly verbal tasks. Individuals with increased reasoning skills who achieve lower recall skills may be impeded by attentional problems rather than by difficulties related directly to recall; however, this study did not test recall ability related to visual stimuli.

Certain considerations should be taken into account regarding these findings, particularly the partial absence of clinical significance. For example, the significant predictive ability of the VCI and PRI of performance on tested recall is comprised of increases and decreases that lack magnitude. An individual would require a 10-point increase on the VCI composite score to precipitate an increase on one recalled subcomponent of the MCT. On the other hand, an

individual would need a 16-point increase on the PRI composite score to cause a reduction in recall ability. One bottom line remains: knowing an individual's verbal abilities will likely inform an evaluator of their ability to recall information, but specific numbers will likely not translate into meaningful clinical information.

***Miranda* Vocabulary**

If an individual wishes to understand the totality of a given material, they first must be able to understand the parts. With regard to *Miranda* rights, if an individual does not understand portions of the warning, then it is likely that overall comprehension is lower. It was expected that participants' verbal abilities would predict *Miranda* vocabulary abilities, which held true in the current study as both the verbal comprehension index and two of its subtests demonstrated significant, positive relationships with the MVS scores. This relationship between the VCI, or verbal abilities, and the MVS is also reflected in jail detainees where individuals with lower VCI scores (i.e., lower/weaker verbal abilities) scored significantly lower on the MVS compared to individuals with higher VCI scores (Rogers, Henry, Sharf, Robinson, & Williams, 2017). From a clinical perspective, a forensic evaluator could expect someone with ID who has stronger verbal abilities to comprehend more *Miranda*-relevant words, than someone with lower verbal abilities; however the results of this study clearly show that neither of these individuals would comprehend much of anything related to *Miranda* rights.

One noteworthy finding was that participants correctly defined only 12% of the words on which they were tested (i.e., approximately four out of 36 words). These extremely low rates of vocabulary comprehension are not surprising as individuals with ID often demonstrate delays and impairments in the development of literacy skills (Jones, Kong, & Finlay, 2006; Lemons et al., 2013; Numminen & Ruoppila, 2002). Rogers and colleagues (2008) noted that, on average,

Miranda warnings require literacy levels at or above the sixth grade which may exceed attainable literacy levels for individuals with ID. This finding coupled with low recall suggests that even though an individual with ID may recall one to two components of *Miranda*, it is unlikely that they possess the prerequisite vocabulary to understand much, if any at all, of the recalled components.

Acquiescence

Similar to prior findings of increased acquiescence in populations with ID, participants exhibited strong tendencies to acquiesce (i.e., agree/say “yes”) in the current study. Participants’ performance on the MAQ evidenced acquiescent rates higher than 88% of the sample of pretrial defendants included in the SAMA manual (Rogers et al., 2012). In a real-world setting, these rates are particularly concerning. Some jurisdictions may ask individuals in interrogations if they understood the rights which were read to them and/or may ask if they want to speak with the law enforcement officers; if that individual answers “yes”, that response may be misconstrued as a “knowing” and/or “voluntary” waiver.

A significant relationship between acquiescence and intelligence was not found. The composite scores of the WAIS-IV did not significantly predict an individual's tendency to acquiesce or to offer consistent answers to logically inconsistent pairs. Previous studies have shown individuals with ID have a strong need to please and offer affirmative answers (Fulero & Everington, 1995; Sigelman, et al., 1981), but the current study suggests these tendencies may be rooted more in behavioral characteristics rather than intellectual capacities.

Conclusions

This study was designed to determine the direct correlates between facets of intellectual abilities and *Miranda* abilities. This is the first study to date to utilize the SAMA (Rogers, et al.,

2012) in a sample solely comprised of individuals with ID. Overall, the data suggested that individuals with ID perform poorly on all tasks related to *Miranda* rights. Participants with ID freely recalled the *Miranda* rights at a significantly lower threshold than individuals without ID. Of import, exposure to *Miranda* warnings significantly increased immediate recall in the current sample; however, the average recall rate remained much lower than individuals without ID.

The connection between intelligence and *Miranda* abilities was most pronounced in verbal abilities, suggesting that individuals with higher verbal skills would likely to do better on measures of *Miranda* knowledge including recall and vocabulary. Individuals with ID acquiesced at increasingly high rates, but there is no significant connection between intelligence and acquiescence. It is important to emphasize that as expected, participants, performed well below their counterparts without ID on all *Miranda* measures.

Implications

The current study demonstrated individuals with ID have a decreased ability to recall relevant information to *Miranda*, although some improvement was demonstrated after exposure. Because unfamiliarity with material increases obstacles with cognitive storage, or the ability to store and retrieve information (Schuchardt, et al., 2011), it stands to reason that repeated exposure and increased familiarity with *Miranda* warnings should increase an individual's ability to recall more of the warning. Indeed, while intelligence has been shown to correlate with understanding of *Miranda* (Grisso, 1981), experience with the legal system may also impact understanding for individuals with ID as justice-involved individuals demonstrated more comprehension of *Miranda* than their non-justice-involved counterparts (Fulero & Everington, 1995). One important consideration is that the current study did not directly assess comprehension of recalled material, which was likely minimal as evidenced by previous research

(see Everington & Fulero, 1999; Fulero & Everington, 1995; O'Connell, et al., 2005). Two implications still exist: First, individuals with ID can retain important information regarding rights, and second, law enforcement officers may perceive recall as familiarity and understanding. Interventions targeting recall would also require education regarding *Miranda* comprehension to ensure individuals' recall was not only based on familiarity, but also evidenced an underlying knowledge of the recalled material.

While existing literature addresses the connection between IQ and *Miranda* comprehension, there is a dearth of precise research that details where and why these deficits occur. Previous studies have addressed IQ and comprehension, but there is very little existing research indicating which *Miranda* components are specifically impacted by IQ. Findings in this study emphasized these connections. The finding that verbal abilities were the most important predictor and had the strongest relationship to *Miranda* abilities is paramount as verbal abilities are considered easier to improve than reasoning skills (Nicholls, Patashnick, & Mettetal, 1986). Targeted interventions at these verbal abilities could translate into improved *Miranda* abilities, which may decrease vulnerability during custodial interrogation if individuals with ID can better understand *Miranda*.

Overall, the current study demonstrated that individuals with ID perform poorly on measures of *Miranda* knowledge and are likely at a disadvantage in the legal system. These individuals' cognitive limitations coupled with high *Miranda* waiver rates among justice-involved individuals (including those without disabilities) creates a situation in which individuals with ID become involved in a system that is incapable of safeguarding their rights. If awareness of these difficulties during interactions with the legal system increases, so does the possibility a

successful intervention can be made prior to an individual with ID entering a system ill-equipped to meet their needs.

Due to its novelty, this study provides one of the few references forensic evaluators and attorneys to utilize when assessing *Miranda* abilities, as measured by the SAMA, in individuals with ID. The contrast between this sample and all others tested with the SAMA is significant and has powerful implications in terms of the increased vulnerabilities of these during interrogation proceedings. Currently, there is no standardized deliverance of *Miranda* rights meaning the rate at which the warning is read, and the method of checking for comprehension, may vary greatly. These variations may cause increased difficulty for individuals with ID if warnings are long, require advanced reading levels, and are read at a rapid pace; also, the inclusion of yes/no questions as comprehension checks may lead to an inaccurate self-appraisal of understanding. Additionally, specialized training regarding interactions with individuals with disabilities are generally not mandated for most jurisdictions. Information from this study may be used to inform and train law enforcement with regard the characteristics associated with intellectual disability, and how best to interact with these individuals to ensure the necessary safeguards of *Miranda* remain in place.

Limitations

There are a few limitations in this study that merit discussion. One possible limitation is that on assessments with binary responses (particularly yes and no responses), persons with ID can frequently give answers without considering the question or stimuli presented; or, will fall into the tendency to acquiesce. Another limitation is the generalizability of this data; the generalizability may not be an accurate representation of other regions due to all of the participants being pooled from a very specific population, in a specific region.

As the population was specifically selected for a target characteristic (i.e., ID), the data collected resulted in a restricted range. Due to the similarities amongst the participants, responses and performances were highly congruent, resulting in clusters of data rather than wider distributions. In other words, variance increased as scores increased due to the floor effect of many of the variables. These restricted ranges may have narrowed the possibility of significant results. And lastly, this population is limited in size due to the small representative sample in the general population. Due to the low base rates of ID, research utilizing these samples often produce smaller sample sizes due to limited access to participants who meet inclusion criteria.

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APPENDICES

Appendix A
Background Questionnaire

1. What is your birthday? How old are you? _____
2. What is your race? _____
3. Are you single, married, or divorced? _____
4. How far in school did you get? _____
5. Have you ever been tested for any intellectual or learning disabilities? _____

If yes: How old were you when you were tested? _____

6. Were you ever in any Special Education programs? _____

If yes:

What age did you start SPED? _____

Were you ever taken out of SPED? _____

What type of SPED services did you receive? _____

Did you have SPED services for every class, or specific subjects?

Were you in a separate classroom from other students or in the same as those who were not getting SPED services? _____

7. Do you currently have a job? _____

If yes: how long have you had this job? _____

If no: how long has it been since your last job? _____

8. What's the name of your current/old job? _____

9. What kind of things did you do at your job?

10. Have you ever worked as a volunteer? _____

If yes:

What type of volunteer work?

What kind of things did you do?

11. Have you ever been involved with the police or a court? _____

If yes: How were you involved?

12. Have you ever been arrested by the police? _____

If yes:

How many times have you been arrested? _____

What were you arrested for?

13. Have you ever been found guilty of a misdemeanor crime? (e.g., petty theft, Minor in Possession, public intoxication, simple assault, disorderly conduct, trespassing, vandalism, drug possession, reckless driving, etc.)

If yes: What crime(s) were you found guilty of?

14. Have you ever been found guilty of a felony crime? (e.g., murder, robbery, rape, aggravated assault, burglary, financial fraud, possession of drugs with intent to distribute, aggravated stalking, possession of a weapon on a school campus, etc.)?

If yes: What crime(s) were you found guilty of?

15. Have you ever spent time in a youth detention center or juvie?

If yes:

How long were you there? _____

How many times have you gone? _____

What were you in for?

16. Have you ever served time in a prison? _____

If yes:

How long were you there? _____

How many times have you gone? _____

What were you in for?

17. Have you ever served time in a jail? _____

If yes:

How long were you there? _____

How many times have you gone? _____

What were you in for?

18. Do you ever watch any crime-related shows? (e.g. Criminal Minds, CSI, Law and Order)

If yes:

What shows do you watch?

How often do you watch these shows? _____

19. Have you ever heard the *Miranda* rights being read to someone?

If yes: Tell me what you remember from the warning. What do the police say to someone who is being arrested?

*OF NOTE: This questionnaire is at a 4th grade reading level.

Appendix B

LEGALLY AUTHORIZED REPRESENTATIVE CONSENT FORM FOR NONMEDICAL RESEARCH STUDY UNIVERSITY OF ALABAMA

Legally Authorized Representative Consent to be in a Research Study

You are being asked to be in a research study. This study is called “Miranda Comprehension and Abilities in Individuals with Intellectual Disability”. This study is being done by a graduate student, Sydnee Erickson, and her supervisor, Dr. Karen Salekin.

Is the researcher being paid for this study?

This study is partially supported by a grant from the Alabama Council on Developmental Disabilities. The grant covers all supplies, cost of travel, participant compensation, and payment for the evaluators. The investigator is not receiving extra pay for this study.

What is this study about?

We are trying to learn more about how well people with intellectual disability know *Miranda* rights – *Miranda* rights are what the police read to people if they are arrested.

Why is this study important?

The information from this study will tell us if IQ is linked to knowledge and understanding of *Miranda* rights.

How many people will be in this study?

About 150 people will be in this study.

What will my ward be asked to do in this study?

He/She will be asked to answer a few questions about himself/herself and things that he/she may have experienced in his/her life. He/She will also be given a test to see what his/her IQ is, and a test that will tell us how much he/she knows about *Miranda* rights.

How long will this study take?

Each person will take the tests at different speeds, but the entire study should not take any longer than three to four hours.

Will this cost my ward anything?

The only cost to you from this study is his/her time.

Will my ward be paid for being in this study?

He/She will be given \$10 after taking the IQ test. He/She will also be given \$10 after taking the tests on *Miranda* rights. This is a total of \$20 if he/she takes both tests.

Can the researcher take my ward out of the study?

The researcher may take him/her out of this study if he/she feels the material is upsetting him/her or if he/she no longer meets the criteria to be in this study.

What are any risks (dangers or harms) of being in this study?

The only risk we expect is that participants might get tired or bored during the testing. If he/she starts to feel tired, we will take a break so that he/she can relax for a short time.

What are the good things that may happen if my ward is in this study?

He/She may not personally get something out of doing this study, but he/she could help us know if we need to make changes to the laws regarding *Miranda* rights.

How will being in this study help society?

This study may help police officers to be more aware of difficulties in understanding *Miranda* warnings.

Will what my ward says stay a secret?

He/She does not have to tell us anything that he/she does not want to. But if he/she tells us about any spouse, child, or elder who is being hurt we must report it.

Will my ward's results be kept a secret?

His/her name will not be put on anything that we use for research. Nobody will be able to know he/she was in this study. Only the research team and the research review board is able to see his/her information.

What are my other options to allowing my ward to participate in this study?

The other option is to not participate in this study.

What are my ward's rights as a participant? What is he/she able to say and do?

He/She can stop at any time. All he/she has to do is say he/she want to stop. It is up to you and him/her to be in this study.

What if I have questions?

You may ask us questions about the study. If you have questions later, you can call one of us.

Sydnee Erickson
Doctoral Student
The University of Alabama
Box 870348
Tuscaloosa, Alabama 35487-0348
Phone Number: 214-385-1264

Karen Salekin
Associate Professor
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Box 870348
Tuscaloosa, Alabama 35487-0348
Phone Number: 205-348-0679

If you have questions about what you are able to say and do as a participant in this study, call Ms. Tanta Myles, The Research Compliance Officer of the University of Alabama at 205-348-8461 or toll-free at 1-877-820-3066.

You can also ask questions or file complaints through the IRB Outreach website at http://osp.ua.edu/site/PRCO_Welcome.html or email us at participantoutreach@bama.ua.edu.

After your ward participates in the study, it is helpful for us if they do the survey for people who have been in studies that is online or you may ask the researcher for a copy of it and mail it to the University Office for Research Compliance, Box 870127, 358 Rose Administration Building, Tuscaloosa, AL 35487-0127.

Statement of Consent to Participate in this Study

This study has been explained to me. I have read the above information and have been provided with a copy of this form. I have had an opportunity to ask questions, and I have received answers. I know that I DO NOT HAVE TO CONSENT FOR MY WARD TO PARTICIPATE AND CAN CHOOSE TO TERMINATE AT ANY TIME.

I understand that I am serving as the legally authorized representative for my ward and give permission for him/her to participate in this research study. My decision is based on what I believe that person would choose and what I believe is best for that person, based on the information I have been given.

My signature below indicates **my consent to allow my ward to participate** in the study.

My name is: _____

My ward's name is: _____

Signature of Consent by LAR/Guardian: _____

Signature of Investigator: _____ Date: _____

Appendix C

Assent Document to be Read to Potential Participants

Hello, Mr./Ms._____. My name is _____. I would like to talk to you about a project that I am working on with my teacher, Karen Salekin. She is a professor at the University of Alabama. Do you have a few minutes to talk with me?

[If yes, move on to script]

[If no...] Can you give me a day and a time when you would be able to talk for a few minutes? I can come back at a time that is better for you. *[If they say no, then the recruiter will thank them for their time and will terminate the conversation].*

Whenever the conversation occurs ...

We are doing a study because we want to know if IQ is related to how well you understand your *Miranda* rights. When I say IQ, I am talking about the things you know and your mental skills. When I say *Miranda* rights, I am talking about what the police tell you after you are arrested.

We want to meet with you for about 3-4 hours. You can take a break at any time during the tests if you wish. If you become too tired to finish the tests, you can ask to stop.

All of your answers to the questions will be written down on forms. All of the answers will be kept private. You cannot get hurt by helping us with the study. You may become tired or irritated because we have to ask so many questions. You can always take a break if you need to. You can stop if you want to.

If you agree to take the tests, we will give you \$10.00, in cash, for each test you complete. We would like to give you two different tests, so in total we will give you \$20.00. We will not talk to you about your answers.

One thing that is important to us is that you are able to take this test. If we think that there is something that might make it hard for you, we will let you know. If you can't participate today, but you want to, we will come back and talk to you about it again. Because we need you to be able to see and hear, if you don't hear or see well, you will not be able to participate. Do you have any problems with your hearing or vision?

[if the person reports problems with either or both of these senses, contact will be halted until confirmation of ability to participate can be obtained from the supervisor of the facility].

I do want to tell you that this study is paid for in part by the Alabama Council on Developmental Disabilities. What that means is they provide all the money for the researchers to travel and test participants, pay the participants, and buy supplies. The primary investigators are not receiving any extra money.

O.K., I think I have told you what I want you to know about this study. Do you have any questions?

[All questions will be addressed immediately].

If you have any questions about this study later, you can call Sydnee Erickson from the University of Alabama at 214-385-1264. You can also ask your guardian questions if you wish. If you have questions or concerns about your rights in a research study, please contact Ms. Tanta Myles, the University of Alabama Research Compliance Officer, at (205)348-8461.

If you want to be in this study, I am going to need you to sign this form [*recruiter gives the potential participant the assent form*]. This form says that its o.k. for us to ask you questions and that you want to be in this study. Do you have any questions about this form or this study?

[All questions will be addressed immediately].

If you have questions about the study, please ask them. If you have questions later, you can call one of us.

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If you have questions about what you are able to say and do as a participant in this study, call Ms. Tanta Myles, The Research Compliance Officer of the University of Alabama at 205-348-8461 or toll-free at 1-877-820-3066.

You can also ask questions or file complaints through the IRB Outreach website at http://osp.ua.edu/site/PRCO_Welcome.html or email us at participantoutreach@bama.ua.edu.

After you are in the study, it is helpful for us if you do the survey for people who have been in studies that is online or you may ask the researcher for a copy of it and mail it to the University Office for Research Compliance, Box 870127, 358 Rose Administration Building, Tuscaloosa, AL 35487-0127.

If you want to do this with me, please sign here (*point to line below*). You may also have a copy of this form to keep.

Name of Participant

Date

Person Obtaining Assent

Date

OF NOTE: This assent form has a grade reading level of 5.6

Appendix D

CONSENT FORM FOR NONMEDICAL RESEARCH STUDY UNIVERSITY OF ALABAMA

You are being asked to be in a research study. This study is called “Miranda Comprehension and Abilities in Individuals with Intellectual Disability”. This study is being done by a graduate student, Sydnee Erickson, and her supervisor, Dr. Karen Salekin.

I am going to use the words *Miranda* rights when I am talking about what police tell you after you are arrested.

I am going to say IQ when I am talking about the things you know and your mental skills.

When I say participant, I am talking about someone who has agreed to be in the study. If you agree to be in the study, you will be a participant.

When I say consent, I am asking you if you want to be in this study. If you say you consent, that means that you understand what you would be doing in the study and that you want to do it.

Is the researcher being paid for this study?

This study is partially supported by a grant from the Alabama Council on Developmental Disabilities. The grant covers all supplies, cost of travel, participant compensation, and payment for the evaluators. The investigator is not receiving extra pay for this study.

What is this study about?

We are trying to learn more about how well people know *Miranda* rights – *Miranda* rights are what the police read to people if they are arrested.

Why is this study important?

Your answers will tell us if IQ is linked to knowledge and understanding of *Miranda* rights.

How many people will be in this study?

About 150 other people will be in this study.

What will I do in this study?

You will be asked to answer a few questions about you and things that you may have experienced in your life. You will also be given a test to see what your IQ is, and a test that will tell us how much you know about *Miranda* rights.

How long will this study take?

Each person will take the tests at different speeds, but the entire study should not take any longer than three hours.

Will this cost me anything?

The only cost to you from this study is your time and possible mileage if you have to drive to meet with us.

Will I be paid for being in this study?

You will be given \$10 after taking the IQ test. You will also be given \$10 after taking the tests on *Miranda* rights. This is a total of \$20 if you take both tests.

Can the researcher take me out of the study?

If the researcher may take you out of this study if he/she feels the material is upsetting you or you no longer meet the criteria to be in this study.

What are any risks (dangers or harms) of being in this study?

The only risk we expect is that you might get tired or bored during the testing. If you start to feel tired, tell us and we will take a break so that you can relax for a short time.

What are the good things that may happen if I am in this study?

You may not personally get something out of doing this study, but you could help us know if we need to make changes to the laws regarding *Miranda* rights.

How will being in this study help society?

This study may help police officers to be more aware of difficulties in understanding *Miranda* warnings.

Will what I say stay a secret?

You do not have to tell us anything that you do not want to. But if you tell us about any spouse, child, or elder who is being hurt we must report it.

Will my results be kept a secret?

Your name will not be put on anything that we use for research. Nobody will be able to know you were in this study. Only the research team and the research review board is able to see your information.

What are my other options to participating in this study?

Your other option is to not participate in this study.

What are my rights as a participant? What am I able to say and do?

You can stop at any time. All you have to do is say you want to stop. It is your choice if you want to be in this study.

What if I have questions?

You may ask us questions about the study. If you have questions later, you can call one of us.

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Tuscaloosa, Alabama 35487-0348
Phone Number: 205-348-0679

If you have questions about what you are able to say and do as a participant in this study, call Ms. Tanta Myles, The Research Compliance Officer of the University of Alabama at 205-348-8461 or toll-free at 1-877-820-3066.

You can also ask questions or file complaints through the IRB Outreach website at http://osp.ua.edu/site/PRCO_Welcome.html or email us at participantoutreach@bama.ua.edu.

After you are in the study, it is helpful for us if you do the survey for people who have been in studies that is online or you may ask the researcher for a copy of it and mail it to the University Office for Research Compliance, Box 870127, 358 Rose Administration Building, Tuscaloosa, AL 35487-0127.

Statement of Consent to be in this Study

Please write your initials by each of these

_____ Someone has told me what this study is.

_____ I have been read this form and have been given a copy of this form.

_____ I have been able to ask questions and get answers.

_____ I know that I do NOT have to agree to be part of this study.

_____ I know that if I agree to be in this study, I am able to stop if I do not want to keep going for whatever reason.

My signature below indicates **my consent to participate** in the study.

Your Signature: _____ Date: _____

Your name (Printed): _____

Researcher: _____ Date: _____

This consent form will be kept by the researcher for at least six years beyond the end of the study.

OF NOTE: This consent form is at a 6th grade reading level.

Appendix E

Tuscaloosa County *Miranda* Warning

You have the right to remain silent. Anything you say can and will be used against you in a court of law. You have the right to talk to a lawyer and have him present with you while you are being questioned. If you cannot afford to hire a lawyer, one will be appointed to represent you before any questioning, if you wish. You can decide at any time to exercise these rights and not answer any questions or make any statements.

Appendix F



April 19, 2018

Sydnee Erickson
Dept. of Psychology
College of Arts & Sciences
Box#: 870348

Re: IRB Protocol 16-005-R2
"Miranda Comprehension and Abilities in Individuals with Intellectual Disability"

Dear Ms. Erickson:

The University of Alabama Non-Medical IRB recently met to consider your renewal application. The IRB voted to approve your protocol for a one- year period.

Your application will expire on April 18, 2019. If your research will continue beyond this date, complete the renewal portions of the IRB Renewal Application. If you need to modify the study, please submit the Modification of an Approved Protocol Form. **Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants.** When the study closes, please complete the Request for Study Closure.

Please use reproductions of the IRB approved stamped consent/assent forms to obtain consent from your participants.

Should you need to submit any further correspondence regarding this application, please include the above application number.

Good luck with your research.

Sincerely,



Stuart Usdan, PhD
Chair, Non-Medical IRB

UNIVERSITY OF ALABAMA
INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS
REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

I. Identifying information

	Principal Investigator	Second Investigator	Third Investigator
Names:	Sydnee Erickson	Karen L. Salekin	
Department:	Psychology	Psychology	
College:	Arts & Sciences	Arts & Sciences	
University:	University of Alabama	University of Alabama	
Address:	Box 870348	Box 870348	
Telephone:	(214) 385-1264	(205) 348-0679	
FAX:	(205) 348-8648	(205) 348-8648	
E-mail:	Slerickson2@crimson.ua.edu	ksalekin@ua.edu	

Title of Research Project: Miranda Comprehension and Abilities in Individuals with Intellectual Disability

Date Submitted: 02/14/2018
Funding Source: Alabama Council on Developmental Disabilities (ACDD); University of Alabama Graduate School; University of Alabama Department of Psychology

Type of Proposal New Revision Renewal Completed Exempt

Please attach a renewal application

Please attach a continuing review of studies form

Please enter the original IRB # at the top of the page

UA faculty or staff member signature: _____

II. NOTIFICATION OF IRB ACTION (to be completed by IRB):

Type of Review: Full board Expedited

IRB Action:

Rejected Date: _____

Tabled Pending Revisions Date: _____

Approved Pending Revisions Date: _____

Approved-this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date: 4/18/2019

Items approved: Research protocol (dated _____)

Informed consent (dated _____)

Recruitment materials (dated _____)

Other (dated _____)

Approval signature: _____ Date: 4-19-18