

MEASUREMENT INVARIANCE OF THE YOUTH PSYCHOPATHIC  
TRAITS INVENTORY AMONG ADJUDICATED YOUTH

---

A Dissertation

Presented to

The Faculty of the Department Psychology and Philosophy

Sam Houston State University

---

In Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

---

by

Ashley L. Malchow

August 2023

MEASUREMENT INVARIANCE OF THE YOUTH PSYCHOPATHIC  
TRAITS INVENTORY AMONG ADJUDICATED YOUTH

by

Ashley L. Malchow

---

APPROVED:

Craig Henderson, PhD  
Committee Chair

Jared R. Ruchensky, PhD  
Committee Co-Chair

Laura E. Drislane, PhD  
Committee Member

Phillip Lyons, J.D., PhD  
Committee Member

Chien-Pin Li, PhD  
Dean, College of Humanities and Social  
Sciences

## **DEDICATION**

To Declan, Claire, and Sean. Without their love, support, and encouragement, none of this would be possible.

## ABSTRACT

Malchow, Ashley L., *Measurement invariance of the Youth Psychopathic Traits Inventory among adjudicated youth*. Doctor of Philosophy (Clinical Psychology), August 2023, Sam Houston State University, Huntsville, Texas.

The majority of the research on psychopathy has been conducted in adults, however, over the last several decades, researchers have become increasingly interested in the presentation of psychopathic traits in children and adolescents. Within the last two decades, the use of self-report measures has grown substantially, with the Youth Psychopathic Traits Inventory (YPI) quickly raising in popularity and availability. In more recent years, a growing body of work has been dedicated to investigating and examining to what extent latent dimensions of psychopathy generalize to different ethnicities, cultures, and sexual orientations. The purpose of the present study was to investigate the factor structure of the YPI in a sample of male and female juvenile offenders, examining the extent in which adult representations of the latent factor structure of psychopathy is replicated with an adolescent sample. Additionally, measurement invariance for sex/gender (male and female) and ethnicity (Black, White, and Hispanic) was examined. A confirmatory factor analysis supported a three-factor model of psychopathy fits the YPI best. Results showed that sex/gender was supported through metric invariance. Invariance analysis for ethnicity revealed only configural invariance was supported across all three ethnicities. Partial metric invariance was supported for White and Hispanic comparisons and Black and Hispanic comparisons. Scalar invariance was not supported for across any of the ethnicities. Overall, the conclusion is that the YPI is useful at broadly detecting three dominant dimensions of

psychopathy (interpersonal, behavioral, and affective dimensions) and appears to be interpreted consistently across groups of adolescents for the most part.

**KEY WORDS:** Measurement invariance, YPI, Psychopathy, Ethnicity, Sex.

## TABLE OF CONTENTS

	<b>Page</b>
DEDICATION .....	iii
ABSTRACT .....	iv
TABLE OF CONTENTS.....	vi
LIST OF TABLES.....	viii
LIST OF FIGURES .....	ix
CHAPTER I: INTRODUCTION .....	1
Psychopathy.....	1
Psychopathy in Children and Adolescents .....	4
Measures of Psychopathy .....	5
Psychopathy, Ethnicity, and Sex .....	10
CHAPTER II: CURRENT STUDY.....	17
CHAPTER III: METHOD.....	19
Participants .....	19
Procedures.....	19
Measures .....	21
Data Analytic Plan.....	23
CHAPTER IV: RESULTS .....	27
Preliminary Analyses.....	27
Confirmatory Factor Analysis .....	30
Measurement Invariance Across Sex/Gender.....	34
Measurement Invariance Across Ethnicities .....	39

CHAPTER V: DISCUSSION .....	46
General Discussion .....	46
Factor Structure .....	47
Measurement Invariance Analyses .....	50
Study Limitations.....	54
Conclusion .....	56
REFERENCES .....	58
VITA.....	76

## LIST OF TABLES

<b>Table</b>		<b>Page</b>
1	SPICIE Item Pairings .....	29
2	SPICIE Score Frequency Statistics.....	30
3	Factor Loadings and Model Fit Statistics: Three-Factor Model.....	34
4	Study Sample Demographics .....	35
5	Measurement Invariance Across Sex/Gender.....	37
6	Measurement Invariance Across Ethnicities.....	41



## LIST OF FIGURES

	<b>Page</b>
Standardized Path Model for the YPI.....	33

## CHAPTER I

### Introduction

#### Psychopathy

The modern-day conceptualization of psychopathy originated with the work of Dr. Hervey Cleckley, as described in his famed book, *The Mask of Sanity* (1941). Based on his work in a psychiatric hospital, Cleckley described 16 specific criteria that he believed could be used to identify and classify individuals with psychopathy (Skeem et al., 2011). The list of diagnostic criteria distilled from his case conceptualizations were: superficial charm and good intelligence; absence of delusions and other signs of irrational thinking; absence of nervousness or psychoneurotic manifestations; unreliability; untruthfulness and insincerity; lack of remorse and shame; inadequately motivated antisocial behavior; poor judgment and failure to learn by experience; pathologic egocentricity and incapacity for love; general poverty in major affective reactions; specific loss of insight; unresponsiveness in general interpersonal relations; fantastic and uninviting behavior with drink and sometimes without; suicide threats rarely carried out; sex life impersonal, trivial, and poorly integrated; and failure to follow any life plan (Cleckley, 1976). The “mask” as denoted in the title of the book captures Cleckley’s notion that psychopaths typically present as confident, personable, and well-adjusted individuals, only to reveal severe underlying pathology over time (Skeem et al., 2011). Cleckley’s seminal work on psychopathy laid the foundation for the operationalization of the disorder, influencing the creation of the DSM II diagnosis of Personality Disorder, Antisocial Type (American Psychiatric Association, 1968), and served as an inspiration for future research.

More contemporary conceptualizations of psychopathy classify it as a personality disorder characterized by a cluster of interpersonal, affective, and behavioral traits (Zwaanswijk et al., 2017). Interpersonally, these individuals may be described as holding an exaggerated sense of self-importance, are grandiose and self-centered, and can readily take advantage of others through the use of deception, superficial charm, and/or manipulation (Raine & Glenn, 2014). These individuals may view others as the source of their shortcomings and blame others for their failures. They may lack remorse or shame, experiencing little guilt when harming others. A pronounced lack of empathy, shallow emotions, and callousness describe some of the affective traits that can appear within psychopathic individuals. Behaviorally, this group of individuals tend to display fearless, reckless, and impulsive actions. They may seek out novelty, gravitating towards risky, exciting situations that others may describe as dangerous. Characteristically, psychopaths show little to no regard for social norms or the rights of others. It is the constellation of personality traits that define psychopathy, however the possibility of “symptoms” present or the form of one psychopath to another are myriad.

In more recent years, a controversial and ongoing debate within the field of psychological sciences concerns the extent to which personality pathology should be conceptualized as dimensional or categorical in nature. This dispute is extended to and includes psychopathic traits. More specifically, the condition under which psychopathic personality traits reflect differences in degree across multiple dimensional traits (i.e., dimensional perspective), suggests that individuals differing on scores on a psychopathy manifest differences in degree rather than different groups of people (i.e., individuals are more or less psychopathic relative to each other; Edens et al., 2011). Alternatively, a

categorical differentiation suggests that individuals comprise different groups or taxons, leading to an interpretation that an individual can be classified as a psychopath or not (Edens et al., 2011). Although the taxonic structure of psychopathy received initial support within the literature (Harris et al., 1994; Skilling et al., 2001), more recent findings support the position of a dimensional latent structure of psychopathy (Edens et al., 2006; Edens et al., 2011; Guay et al., 2007). Of particular relevance, Edens et al. (2011) compared dichotomous and dimensional classification models within a sample of 723 juvenile offenders using two self-report measures of psychopathy, the Antisocial Process Screening Device (APSD) and the Psychopathic Personality Inventory - Short Form (PPI-SF). Edens et al. (2011) found that both self-report measures were indicative of a dimensional conceptualization, suggesting psychopathic traits within juveniles should also be viewed on a dimensional scale or spectrum as opposed to being categorically differentiated.

The clinical presentation of a psychopath is often misunderstood or exaggerated both in the public at large and among academics, mental health professionals, and within the criminal justice system. A common misconception is that psychopathy, violence, and criminal behavior invariably coincide. This misunderstanding appears to predominantly be due to a “relatively small number of psychopathic offenders responsible for a disproportionate amount of crime” (Blais et al., 2014). Despite the overrepresentation of individuals high on traits within the forensic population (Hare, 2003), not all psychopaths display violent or antisocial behaviors (Lilienfeld, 1994). These individuals are often referred to as “successful psychopaths” and symbolize that psychopathy is not synonymous with criminal behavior (Raine & Glenn, 2014). However true that not all

psychopaths engage in illegal behaviors, extensive research within the field of social science and criminal justice demonstrate that psychopathic individuals tend to display more antisocial behaviors when compared to those without elevated psychopathic traits (Kiehl & Hoffman, 2010). Numerous studies have found associations with: violence, in forensic populations (Laurell et al., 2014; Thomson et al., 2019), adult psychiatric samples (Hill et al., 2004), community samples (Neumann & Hare, 2008), and within adolescent populations (Kosson et al., 2002; Vitacco et al., 2008); criminal behavior in adults and adolescents (Bauer et al., 2011; Kosson et al., 1990); and with criminal recidivism (Hart et al., 1988; Kahn et al., 2013). Given the complexity of psychopathy as a personality disorder, with countless variations in presentation, and known correlations with maladaptive and potentially dangerous behaviors, it is vital for researchers and clinicians to have confidence in the reliability and validity of the measures used to assess these personality traits.

### **Psychopathy in Children and Adolescents**

The majority of the research on psychopathy has been conducted in adults, however, over the last several decades, researchers have become increasingly interested in the presentation of psychopathic traits in children and adolescents. Much of the research has highlighted the similarity of psychopathy as a construct between adults and adolescents, with current conceptualizations suggesting children and adolescents would also present with interpersonal, affective, and behavioral features (Skeem et al., 2011). General similarities that tend to overlap within the literature indicate that it has predictive validity with respect to violence (Kosson et al., 2002; Vitacco et al., 2008) and criminal behaviors (Edens et al., 2007; Leistico et al., 2008). In contrast, there is a debate within

the literature concerning the long-term stability of psychopathic features from childhood to adulthood and the legitimacy of measuring and conceptualizing psychopathy in children as a downward extension of what has been learned about adult psychopathy (Skeem et al., 2011). More specifically, principals of developmental psychology indicate that psychopathic traits can be expressed differently across an individual's lifespan. For example, certain levels of impulsivity and irresponsibility may be considered diagnostic within adulthood but deemed relatively or developmentally normative in adolescence (Skeem et al., 2011). Moreover, researchers have proposed that psychopathic traits within adolescence may actually transform into outcomes other than adult psychopathy (Hart et al., 2002; Skeem et al., 2011). This is supported by developmental principals that indicate that stable personality (and by extension, personality pathology; i.e., psychopathy) does not exist within childhood or adolescence (Hart et al., 2002), with personality not becoming stable until approximately the age of 30 (Skeem et al., 2011). Few studies have assessed the stability of psychopathic traits across developmental stages such that this remains an open question for adolescents/young adults. Despite the open debate concerning the similarities, differences, and weaknesses in comparing the construct of psychopathy in children, adolescents, and adults, numerous models have been developed to explain the latent factor structure of psychopathy in both adults and juveniles.

## **Measures of Psychopathy**

### ***Clinician Rated Scales***

The most commonly used clinician rated measure of psychopathy is The Psychopathy Checklist-Revised (PCL-R). In 1980, Canadian psychologist Robert D. Hare attempted to organize a process of assessing psychopathy by developing criterion-based

protocol, consisting of 22-items, called the Psychopathy Checklist (Skeem et al., 2011). Approximately a decade later, Robert Hare revised the original measure, removing two items, and published his findings for the Psychopathy Checklist – Revised (PCL-R) (Hare, 1991). The PCL-R was designed to assess psychopathy as a unitary construct; however, most research has suggested it is more appropriately conceptualized as two factors and four distinctive subscales referred to as “facets” (Skeem et al., 2011). The first factor is the interpersonal-affective scale, which contains facets 1 and 2. Both facets with the first factor represent dynamic risk factors, such as pathological lying, shallow affect, and lack of remorse or guilt (Sohn et al., 2020). Dynamic risk factors are characteristics related to recidivism that (theoretically) can change, resulting in a decrease of recidivism rates when they do change (Hildebrand & de Ruiter, 2012). The second factor, the antisocial scale, contains facets 3 and 4. Both facets on this factor are thought to represent static risk factors, such as parasitic lifestyle, impulsivity, and early life behavioral problems. In contrast to dynamic risk factors, static risk factors are unaffected by intervention, such as interventions by the justice system. Since its publication, the PCL-R has been extensively researched and shown to be a valid measure of psychopathy (Salekin et al., 1997; Salekin et al., 2001).

The child and adolescent form of the PCL-R, The Psychopathy Checklist: Youth Version (PCL: YV), is nearly identical to the adult version but with alterations to item wording to make it age appropriate for the youth population. For example, items were modified to remove developmentally inappropriate content (e.g., references to marital relationships were removed) and items reflecting more developmentally appropriate experiences with respect to peers, family, and school (e.g., the “irresponsibility” item

references lack of concern about schoolwork) (Skeem et al., 2011, p. 123). The PCL: YV is designed for juveniles between the ages of 12 and 18 and has been shown to be a valid measure of psychopathy in both adolescent offenders (Bauer et al., 2011; Kosson et al., 2002) and community samples (Forth et al., 2003).

The PCL-R and its derivatives have traditionally been viewed as having two distinct but correlated factors, the affective/interpersonal factor and the behavioral or socially deviate behaviors factor (Harpur et al., 1988). Initially, the two-factor structure received substantial support (Hare et al., 1990; Harpur et al., 1989; Harris et al., 1994); however, numerous studies have failed to replicate this structure (Brinkley et al., 2008; Kosson et al., 1990). Diverting from the two-factor approach, Cooke and Michie (2001) proposed a three-factor model consisting of an affective, interpersonal, and behavioral dimension. This model focused on the personality factors and excluded antisocial behavior (i.e., criminality) as a separate construct. This model has found support within the literature for both adults (Jackson et al., 2002; Warren et al., 2003) and adolescents (Forth et al., 2003; Kosson et al., 2013).

In an effort to reintegrate the antisocial behavior dimension that was excluded from the three-factor model, Hare (2003) proposed a four-factor model. This model includes the three factors as described by Cooke and Michie, with the addition of a fourth factor (antisocial factor) which contains criminal behavior elements (Jones et al., 2006). The four-factor structure is an extension of the two-factor model in which the personality and behavioral factors are each split into two facets that tap interpersonal versus affective personality traits and deviant lifestyle versus antisocial behavior traits (Hare & Neumann, 2005). The four-factor model is comprised of four correlated dimensions (interpersonal,



affective, lifestyle, and antisocial). Research studies that provide evidence in support of the four-factor structure of psychopathic traits include samples of adult offenders (Mokros et al., 2011; Neumann et al., 2007), adolescents (Kosson et al., 2013), and community samples (Dotterer et al., 2017; Neumann & Hare, 2008; Neumann et al., 2012).

### ***Self-report Scales***

For many years the PCL-R was, and still in many researchers' opinion, the gold-standard for measuring psychopathy. However, within the last two decades, the use of self-report measures has grown substantially, due to the increase of studies demonstrating the validity of self-report questionnaires for measuring psychopathic traits (Sellbom et al., 2018). Of particular relevance, there are several self-report measures designed to assess psychopathic traits within children and adolescents. For example, the Antisocial Process Screening Device (APSD) and the Youth Psychopathic Traits Inventory (YPI) have been widely used in both research and clinical contexts with numerous studies showing the reliability and validity of these measures within adolescents. The APSD is a 20-item measure that was adapted from the PCL-R (Poore et al., 2020) with the intent to screen for psychopathic traits in adolescents. Factor analyses on the APSD indicate a three-factor structure composed of Impulsivity/Conduct (I) problems (five items), Callous-Unemotional (CU) traits (six items), and Narcissism factors (seven items) (Vaughn et al., 2005). The three-factor model has been widely published and supported within the literature using children and adolescent from community samples (Bijttebier & Decoene, 2009; Frick et al., 2000), juvenile offenders (Goodwin et al., 2015), and clinic-referred children (Dong et al., 2014).

Similarly, the YPI is a 50-item measure designed to assess the core features of psychopathic personality with less of an emphasis on antisocial behavior. The YPI was specifically designed and modeled after the three-factor model of psychopathy (Cooke & Michie, 2001) reflecting the following three factors: the Grandiose/Manipulative factor (the interpersonal scale), the Callous/Unemotional factor (the affective scale), the Impulsive/Irresponsible factor (the behavioral scale) (Pihet et al., 2014). This particular factor structure has been replicated within community and forensic adolescent samples across numerous cultures, including Ghana (Adjorlolo & Watt, 2019), Portugal (Simões et al., 2016), The Netherlands (Hillege et al., 2010; Veen et al., 2011), and Switzerland (Boonmann et al., 2020; Pihet et al., 2014). The original intent of the inventory was to measure psychopathy within community samples of youth 12 years of age and older (Declercq et al., 2009; Hillege et al., 2010), but it has been extended to additional populations including clinical and inpatient settings (Munoz et al., 2019) and forensic adolescent samples (Pechorro et al., 2015; Veen et al., 2011).

Since its introduction in 2002, numerous studies have investigated the factor structure and the validity of the YPI within adolescents. Andershed et al. (2002), authors of the inventory, compared the YPI to self-reported measures of conduct problems in a sample of 1,024 male and female adolescents in Sweden. Suggestive of strong construct validity, the authors found early behavioral problems, poor behavioral control, and hyperactivity-impulsivity-attention (HIP) problems were positively correlated with total scores on the YPI among both male and female adolescents. These findings suggest strong construct validity, as correlations between the personality dimensions measured by the YPI and conduct problems would suggest the YPI measures psychopathic traits

(Andershed et al. 2002). Similarly, Poythress et al. (2006) found the YPI total score and the three factors were positively and significantly correlated with externalizing and internalizing behaviors as measured by the Comprehensive Adolescent Severity Inventory (CASI), also indicative of construct validity. Additional studies have examined the convergent validity of the YPI with other well-established measures of psychopathy. In a sample of detained female adolescents, the YPI total score and each of the dimensions (i.e., factors) showed a strong correlation with the APSD (Colins et al., 2014). Convergent validity between the YPI and the APSD was also replicated in additional forensic samples (Pechorro et al., 2015; Poythress et al., 2006) and with the PCL: YV (Andershed et al., 2007).

In addition to the YPI, the Youth Psychopathic Traits Inventory – Short Version (YPI-S) has displayed good convergent validity with the APSD (Colins et al., 2014) and is highly correlated with the full-length version of the YPI (Pechorro et al, 2015; van Baardewijk et al., 2010). In two samples of at-risk adolescents, Gillen et al. (2019) found the YPI-S total score demonstrated good convergent validity with the APSD total score and the PCL: YV total score. In summary, self-report measures, specifically the YPI, have demonstrated across numerous studies to be valid measures of psychopathy, including among children and adolescents.

### **Psychopathy, Ethnicity, and Sex**

The majority of research that supports the conceptualization and operationalization of psychopathy is predominantly based on White males, largely from North America (Skeem et al., 2011). In more recent years, a growing body of work has been dedicated to investigating and examining to what extent the major dimensions of

psychopathy generalize to different ethnicities, cultures, and sexual orientations. The following sections explore the findings within the extant literature thus far, highlighting empirically supported findings as well as inconsistent results. First, we will address differences across cultures and ethnicities, both within adult and adolescent populations. Next, we will review sex differences in dimensional assessments of psychopathy and sex differences in factor structures and correlates. Despite the growing interest of examining psychopathic traits in adolescent populations, the literature and evidence covering differences across sex/gender and ethnicities are more developed in the adult population. Thus, research findings within children and adolescents will be selectively highlighted in the following sections when applicable.

### ***Ethnicity***

Historically, the majority of psychopathy research has been based on samples comprised of Caucasian males, most commonly from North America. The extent to which psychopathy research can be generalized to different cultures, ethnicities, and races is vitally important, as ethnic minorities are overrepresented in forensic settings. Limited research has examined the factor structures and invariance across multiple ethnic groups, both across genders and outside of the United States. Even less psychopathy research on invariance across ethnicities has been conducted within the adolescent population. Although, some research has shown similar factor structures and measurement invariance in adults (Neumann & Hare, 2008). These researchers examined the prevalence and factor structure of psychopathic traits in a community sample of adults using the PCL: SV and found evidence that a four-factor model was invariant across sex and ethnicity (White and African American ethnicities). Cooke et al. (2001)

similarly examined the factor structure of the PCL-R in Caucasian and African American participants and found no cross-group differences in factor structure. To date, most research on the generalizability of psychopathic traits across ethnic groups largely consists of comparisons between Caucasian and African American subgroups, with very little research including Hispanic, Asian, Native American, or other underrepresented minority groups.

Of the research conducted within adolescents, generalization of results across multiple ethnic groups also remains limited due to the restricted or selective range of groups included in the studies as well as the few that exist in the literature. Exceptions are two notable studies out of The Netherlands that have demonstrated strong evidence for comparable structural models and invariance among youth from different ethnic backgrounds. For example, Veen et al. (2011) found the three-factor structure on the YPI was comparable between the ethnic majority (Dutch) and the ethnic minority group (Moroccan) in a sample of incarcerated adolescents in The Netherlands. Additionally, Zwaanswijk et al. (2017) found evidence for measurement invariance on the YPI across ethnicity (Dutch, Western immigrant, and non-Western immigrant) in a community sample of youth in The Netherlands. However, this study determined the bifactor model (one general factor and three specific factors) resulted in the best fit to the data. Similar findings were found for the PCL: YV in a sample of African American, Caucasian, and Latino adolescent offenders in the United States (Jones et al., 2006). Although Jones et al. (2006) shows evidence of comparability across ethnicity in the United States, findings from the studies conducted in The Netherlands should be viewed with caution as the

diversity of ethnicities represented are limited and are not characteristic of the communities found in the United States.

However, some studies have failed to find support for measurement invariance in psychopathy (Horan et al., 2014). Mokros et al. (2011) used a multiple-group confirmatory factor analysis to compare the factor structure of the PCL-R in a sample of North American and German male offenders. Results indicate configural factorial invariance (a test that allows researchers to examine whether the overall factor structure stipulated for a measure fits well and has the same number of factors for all groups measured in the respective sample); however, when more rigorous tests of measurement invariance were conducted (weak and strong invariance; see below for specific definitions) the factor structure varied across samples. Given the mixed findings across extant studies on the generalizability of psychopathy to ethnic groups beyond Caucasian males, and the paucity of studies examining measurement invariance for specific psychopathy assessments in both adult and adolescent samples, there is much room in the literature for studies focusing on measurement invariance in measures of psychopathy across meaningful subgroups, specifically among juveniles where the literature is much more limited.

### ***Sex/Gender***

The extent to which psychopathy can be generalized across sex/gender<sup>1</sup> is unclear, both as a construct and in the measures used to assess psychopathic traits (Skeem et al.,

---

<sup>1</sup> Data used in the present study were gathered between the years of 2000 and 2003, with demographic information obtained on all participants. Demographic data consisted of gathering information on a participant's "gender," which consisted of two categories of "male" and "female." This operationalization of "gender" is more closely aligned with the updated term "sex assigned at birth" and not gender, which in modern definitions signifies the individuals' perception of a socially defined identity. Therefore, this study uses the term "sex/gender" to represent the term used when the data was originally

2011). Most research to date on the dimensional assessment of psychopathic traits generally shows that men tend to display higher mean levels of psychopathy than women (Cale & Lilienfeld, 2002; Forth et al., 1996; Rutherford et al., 1998). These results have been found across measures like the Self Report Psychopathy Scale-II (SRP-II; Zagon & Jackson, 1994; Lilienfeld & Hess, 2001), the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996), the Levenson Psychopathy Scale (LPS Primary and Secondary Scales; Wilson et al., 1999), and on the Interpersonal and Behavioral factors of the Youth Psychopathic Traits Inventory (YPI; Munoz et al., 2019). However, these results are inconsistent with research showing no differences in psychopathy traits between sexes. Cooney et al. (1990) found that an overall multivariate analysis of variance (MANOVA) revealed nonsignificant sex differences on the PCL total scores, indicating that men and women did not differ significantly in terms of mean levels of psychopathy. Likewise, Hamburger et al. (1996) also observed that men and women did not differ in average levels of psychopathic traits as measured by the PPI. Most studies indicate that men score higher than women on dimensional operationalizations of psychopathy; however, the paucity of research on female offenders, particularly within the juvenile population, is needed in order to better explain observed differences across sex/gender and the generalizability of psychopathy as measured by the most widely used assessment measures (Cale & Lilienfeld, 2002).

Despite the relative consensus within the literature suggesting, on average, males score higher on average than females on measures of psychopathy, much less research

---

collected (i.e., gender), with the updated definition of what was actually measured in more modern terms (i.e., sex assigned at birth, or “sex”). The term “sex/gender” in no way represents the author’s beliefs that sex and gender are synonymous. However, the term “sex/gender” is used throughout the remaining document to represent the data on how it was gathered (“gender”) with the updated term (“sex”).

has been conducted on sex differences in factor structures and correlates of psychopathy. Of those conducted, most studies have found similar or consistent factor structures for both sexes, indicating the presence of configural invariance. Yet more in-depth analyses investigating invariance across factor loadings, intercepts, and error variances (weak, strong, and strict invariance) are needed to support conclusions of sex/gender invariance on measures of psychopathy. Of those finding similar latent structures, Kosson et al. (2013) found both three- and four-factor models on the PCL: YV demonstrated adequate fit among a sample of female adolescents. Similarly, Neumann et al. (2007) reported a good fit for the four-factor model in a sample of both male and female inmates. Results showing homogeneous factor models between males and females was also found in two- and three-factor models in a study conducted by Warren and colleagues (2003).

However, there are notable exceptions to the findings of factor structures in males and females. In a sample of 103 female offenders, a study conducted by Salekin et al. (1997) showed that individual items of the PCL-R loaded differentially within the two dimensions among females as compared to male counterparts. A finding that suggested the two-factor model described by Harpur et al. (1988) may not apply to incarcerated females or to the broader female population (Salekin et al., 1997). Similar findings were also found in samples of adolescents (Sevecke et al, 2009). Dotterer et al. (2017), examined measurement invariance on the SRP-SF across genders in a sample of young adults. The authors found that configural invariance held; however, there were significant differences in the endorsement of items (i.e., scalar invariance), with men scoring significantly higher than women across the majority of items. In contrast, Neumann et al. (2012), found strong invariance was evident across males and females in a large sample



of community participants on the full-length version of the SRP. Similar results for measurement invariance across genders were also found for adult offenders (Bolt et al., 2004) and adolescents (Jones et al., 2006; Zwaansijk et al., 2017). Mixed findings suggest further investigation of sex/gender differences in the latent factor structure of psychopathy is needed.

In addition to an understanding of the underlying latent structure across sex/gender, knowing the external correlates of the factor structure is as important due to its clinical relevance and policy implications. As mentioned previously, psychopathic traits tend to be associated with higher rates of violence (Hill et al., 2004; Laurell et al., 2014; Thomson et al., 2019; Vitacco et al., 2008), criminal behavior (Bauer et al., 2011; Kosson et al., 1990) and criminal recidivism (Hart et al., 1988; Kahn et al., 2013). However, some studies have found differences between sexes when investigating associations between psychopathy and its correlates. In a study conducted by Thomas et al. (2019), sex significantly moderated the associations among facets of psychopathy (as measured by the PCL: SV), physical, and indirect aggression. More specifically, the authors found that the affective facet was positively associated with physical aggression only for women, whereas the antisocial facet was positively associated with indirect aggression only for men. In a sample of female inmates, Salekin et al. (1998) found different recidivism rates between females and males. Similar results for sex/gender differences in recidivism rates were found in additional samples across other studies (Edens et al., 2007; Odgers et al., 2005).

## CHAPTER II

### Current Study

The purpose of the present study was to investigate the factor structure of the YPI in a sample of male and female juvenile offenders, examining the extent in which adult representations of the latent factor structure of psychopathy was replicated with an adolescent sample. Due to overwhelming evidence in support of the three-factor latent structure on the YPI (Adjorlolo & Watt, 2019; Boonmann et al., 2020; Declercq et al., 2009; Hillege et al., 2010; Munoz et al., 2019; Pechorro et al., 2015; Pihet et al., 2014; Simões et al., 2016; Veen et al., 2011), we also expected that a three-factor structure would fit our data. More specifically, we hypothesized the three-factors would be consistent with factors observed in numerous other studies: (1) interpersonal factor (Grandiose/Manipulative), (2) affective factor (Callous/Unemotional), and (3) behavioral factor (Impulsive/Irresponsible). In addition, we also examined the measurement invariance across both sex (male and female) and ethnicity (Black, White, and Hispanic). Previous studies have found mixed results when examining invariance of psychopathy measures between certain ethnic groups, suggesting additional studies are needed to address concerns regarding the validity of psychopathy measures within all ethnicities. We expected to find invariance across ethnic groups within our sample. Despite inconsistent results in prior studies, Zwaanswijk et al. (2017) found no cross-group differences (gender or ethnicity) on the YPI in a sample of adolescents within the community when examining measurement invariance, as I propose to do below. Therefore, we expected to replicate invariance results for ethnically diverse adolescents within a forensic sample. As for measurement invariance analyses on the YPI for

sex/gender, we hypothesized our data will be invariant across sexes (male and female) at a configural invariance model level. The literature to date has displayed more mixed results across sex/gender when examining psychopathy, with studies only investigating invariance through configural invariance. We expected that more in-depth and complex analyses investigating invariance across factor loadings, intercepts, and error variances will vary across males and females. A concise, inclusive list of study aims and hypotheses are listed below.

1. Investigate the underlying factor structure on the YPI using a confirmatory factor analysis. We expect to find a three-factor structure comprising interpersonal, affective, and behavioral factors.
2. We will examine the measurement invariance on the YPI across three ethnicities: Black, White, and Hispanic. We hypothesize that invariance will hold across all ethnicities for the least restrictive forms of invariance (weak invariance). It is not clear whether this will continue to replicate through more rigorous levels of invariance.
3. Lastly, we will explore measurement invariance on the YPI across sex/gender (male, female). We anticipate that we will find configural invariance (the least restrictive model), however more restrictive models will vary across males and females.

## CHAPTER III

### Method

#### Participants

Participants were 1,354 juvenile offenders (1,170 males and 184 females) recruited for participation in the Pathways to Desistance Study (Jones et al., 2006). The study sample consisted of adjudicated youth who, upon review of court files, had been convicted or found guilty of a serious offense (Schubert et al., 2004). Adolescents deemed eligible to enroll were between the ages of 14 and 17 at the time of their committed offense. The enrollment period for the study was from November 2000 to January 2003. Eligible crimes included predominantly felony charges, however some less serious property crimes, misdemeanor weapon offenses, and misdemeanor sexual assault offenses were also included in the sample. Due to the high probability of drug related offenses, particularly as it relates to male adolescents, the number of male study participants who were considered drug offenders was limited to 15% of the overall sample. Of the eligible youths approached for participation, 20% declined. Participant mean age at the time of adjudication was 15.9 years ( $SD = 1.4$  years) and self-identified as Black (44%), White (25%), Hispanic (29%), and Other (2%).

#### Procedures

The current study is a secondary analysis of the Pathways to Desistance Study data set. In Pathways to Desistance, participants were recruited from two large U.S. cities: Phoenix, AZ ( $N = 654$ ) and Philadelphia, PA ( $N = 700$ ) (Miron et al., 2020). Study sites were selected due to 1) the high rates of serious crimes committed by juveniles in those communities, 2) the diversity of potential participants, 3) the sizeable potential

sample of female juvenile offenders available for participation, 4) a contrast in the functioning between the two justice systems (sparse treatment system vs. more extensive treatment system, 5) the political environment within the participating city, along with the willingness and engagement of local policy makers, and 6) the experienced research collaborators available (Schubert et al., 2004).

Pathways to Desistance was designed to follow participants for seven years following the baseline assessment; interviews were conducted every six months post baseline for the first three years (i.e., 6, 12, 18, 24, 30, and 36 months) and once per year for the remaining four years (i.e., 48, 60, 72, and 84 months). For youth remaining within the juvenile system, baseline interviews were conducted within 75 days of their adjudicated hearing (Schubert et al., 2004). Youth being prosecuted within the adult system were interviewed within 90 days of their decertification hearing (Philadelphia) or of their arraignment hearing (Phoenix). Baseline interviews were conducted over two days in 2-hour sessions and follow up interviews were conducted in one 2-hour session. All interviews were conducted on laptop computers.

Follow up interviews began 6 months following completion of the baseline interview (Schubert et al., 2004). The time schedule for interviews were: 6, 12, 18, 24, 30, 36, 48, 60, 72, and 84 months. The window of opportunity to complete each follow up interview began 6 weeks prior to the target date and closed 8 weeks after the target date. The Youth Psychopathic Traits Inventory was not collected at baseline but was completed at each follow up time period (6 – 84 months). For the current study, data will be used for the 12-month follow up assessment alone because this assessment yielded the

highest response rate on YPI with the least amount of missing data. Further, the study hypotheses are formulated for cross-sectional data.

## **Measures**

### ***Youth Psychopathic Traits Inventory***

The Youth Psychopathic Traits Inventory (YPI) is a 50 item self-report questionnaire designed to measure psychopathic traits among children and adolescents (Andershed et al., 2002). The inventory consists of 10 subscales, each with five items, grouped into three higher-order factors. The 10 subscales are: dishonest charm (e.g., "When I need to, I use my smile and my charm to use others"), grandiosity (e.g., "I am more important and valuable than other people"), lying (e.g., "I have often gotten into trouble because I have lied too much"), manipulation (e.g., "To get people to do what I want, I often find it efficient to con them"), callousness (e.g., "When other people have problems it is often their own fault, therefore one should not help them"), unemotionality (e.g., "I don't let my feelings affect me as much as other people do"), remorselessness (e.g., "I have the ability not to feel guilt and regret about other things that I think other people would feel guilty about"), impulsiveness (e.g., "It often happens that I do things without thinking ahead"), thrill seeking (e.g., "I like to do things just for the thrill of it"), and irresponsibility (e.g., "It has happened several times that I have borrowed something and then lost it"). The 10 subscales are further grouped into three higher-order factors: the Grandiose/Manipulative factor (the interpersonal dimension) is comprised of subscales dishonest charm, grandiosity, lying, and manipulation (a total of 20 items); the Callous/Unemotional factor (the affective dimension) is comprised of subscales remorselessness, unemotionality, and callousness (a total of 15 items); and the

Impulsive/Irresponsible factor (the behavioral dimension) is comprised of the subscales thrill seeking, impulsiveness, and irresponsibility (a total of 15 items). Measurement invariance analyses will examine consistency of factor structure on the YPI across both sex/gender and ethnicity.

Each item on the YPI is set on a 4-point Likert-like scale, ranging from 1 (does not apply at all) to 4 (applies very well) (Andershed et al., 2002). Several items are reverse scored and all items are worded so that respondents do not interpret psychopathic traits as inherently negative. Higher scores reflect a greater presence of psychopathic traits. Internal consistency based on Cronbach's alpha per Andershed et al. (2007) ranged from  $\alpha = .61$  (callousness and irresponsibility subscales) to  $\alpha = .84$  (dishonest charm). The internal consistency for the three high-order factors were  $\alpha = .82$  for the Grandiose/Manipulative factor,  $\alpha = .81$  for the Callous/Unemotional factor, and  $\alpha = .68$  for the Impulsive/Irresponsible factor (Andershed et al., 2007). The YPI has demonstrated significant moderate to moderate-high correlations in both adolescent males and females with the PCL: YV ( $r=0.29-0.51$ ; Andershed et al., 2007) and even higher with the Antisocial Process Screening Device (APSD;  $r = 0.76-0.77$ ; Seals et al. 2012; Poythress et al. 2006). The YPI's three-factor structure and the internal consistency, criterion and convergent validity of the YPI scores have been replicated in adolescents across various cultures (Declercq et al., 2009; Hillege et al., 2010; Pechorro et al., 2017; Pihet et al., 2014; Seals et al., 2012; Wang et al., 2017).

The internal consistency based on Cronbach's alpha for the Pathways to Desistance Study, at the 12-month follow up assessment, ranged from  $\alpha = .43$  (callousness subscale) to  $\alpha = .85$  (manipulation subscale). The factors also showed good

internal consistency at the 12-month time point,  $\alpha = .91$  for the Grandiose/Manipulative factor,  $\alpha = .73$  for the Callous/Unemotional factor, and  $\alpha = .83$  for the Impulsive/Irresponsible factor. The YPI total score at 12 months was  $\alpha = .93$ . At the 6-month follow up assessment, Pathways to Desistance authors (Principal investigator, Edward P. Mulvey) found a three-factor CFA model adequately fit the data,  $\chi^2(32) = 279.025, p < .05$ , SRMR = .046, CFI = .950, TLI = .930, RMSEA (CI) = .087 (.078-.096).

### **Data Analytic Plan**

First, a series of preliminary analyses will be run to examine for missing data and check for univariate and multivariate outliers. Descriptive statistics for standardized scores (z-scores) will be used in the detection of univariate outliers, using the absolute value of  $\pm 3.29$  to determine outliers as outlined by Tabachnick and Fidell (2013), as well as examining boxplots. Multivariate outliers will be detected with the use of Mahalanobis distance. Due to potential for invalid protocols within the data, such as inconsistent or careless responding, with ramifications that include a reduction of model fit in subsequent latent variable analyses (Penson et al., 2018), we will screen for invalid protocols through use of the validity scale developed by Penson et al. (2018). Cut-off scores of  $\geq 9$  on the Screening Procedure for Inconsistent or Careless Item Endorsement (SPICIE) scale will be used to identify invalid YPI protocols, as suggested by the scale developers (Penson et al., 2018). All invalid protocols will be eliminated from further analyses. Preliminary analyses will be conducted in SPSS Version 25.

Next, using the robust maximum likelihood estimation method a Confirmatory Factor Analysis (CFA) for continuous data will be used to examine if the hypothesized



three-factor model shows adequate fit to the observed data. Items on the YPI are set on an ordinal scale ranging from 1 (does not apply at all) to 4 (applies very well). However, according to Byrne (2008), four categories within the Likert-like scale can be treated as continuous variables for practical applications. In addition, as Mplus estimates multiple thresholds per item when analyzing categorical data, the invariance analyses would prove to be exceedingly complicated. Therefore, all items on the YPI will be treated as continuous variables. Model fit will be inspected using the chi-square ( $\chi^2$ ) test of exact fit, the Root Mean Square Error of Approximation (RMSEA) and its confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residual (SRMR) (Jackson et al., 2009; Kline, 2016). Recommended thresholds for good fit are: RMSEA < 0.05, CFI > 0.95, TLI  $\geq$  0.95, and the SRMR < 0.08; acceptable thresholds are: RMSEA < 0.08 and CFI > 0.90 (McDonald & Ho, 2002; Hooper et al., 2008).

Finally, measurement invariance will be investigated by testing configural invariance, weak invariance (also referred to as metric invariance), strong invariance (also commonly referenced as scalar), and strict invariance for across gender (male, female) and ethnicity (Black, White, and Hispanic) (Kline, 2016). Configural invariance will be examined by allowing all parameters to be freely estimated in each group. Similar factor structures across subgroups—that is, the same number of factors and the same items loading on the same factors—suggests that configural invariance holds (Feaster et al., 2010). In other words, the underlying latent factor structure is consistent across groups. The configural model will serve as a baseline model for which models invoking stricter levels of invariance will be compared. The next step in the process will be to

investigate weak invariance by constraining factor loadings equally across groups and comparing the fit indices for the weak invariance model to the configural invariance model, examining one factor loading at a time. Chi-square difference testing will be used to identify whether the model allowing the factor loadings to freely vary across groups provides a better fit to the data than the more constrained model (one in which the factor loadings constrained to equality). Weak invariance means that a unit increase on a particular item will be matched as a proportionate unit increase in the level of the latent construct for all groups (Feaster et al., 2010). If the hypothesis of weak invariance holds, this implies that individuals within the groups attribute the same meaning to the latent factors. Therefore, the hypothesis of weak invariance will be retained and strong invariance will be investigated next.

In testing for strong invariance, the restriction of constraining item intercepts (analogous to an item mean), in addition to constrained factor loadings, will be applied (Kline, 2016). Item intercepts are the “mean level of endorsement of the item when the latent factor is equal to zero” (Feaster et al., 2010, p. S118). If the strong invariance model is supported it would imply that an individual from one group (e.g., Black) and an individual from another group (e.g., White) with the same level on the factor should also obtain the same score on the indicator (Kline, 2016). If the hypothesis of strong invariance is rejected then it would mean that different groups require different levels of an item in order to obtain the same level of the underlying latent factor (Fester et al., 2010). Lastly, in the event that strong invariance is found across groups, strict invariance will be investigated. This model, being the most restrictive level of measurement invariance, assumes “strong invariance and equality in error variances and covariances

across groups” (Kline, 2016, p. 399) The CFA and invariance analyses will be conducted using Mplus Version 8.4 and path diagrams will be generated in Amos Version 25.

In the event that we are faced with rejection of the null hypothesis, we will examine modification indices for the most likely indicators contributing to the rejection (Feaster et al., 2010). We will allow those parameters to vary across the appropriate groups and reassess the model. Prior to making any re-specifications to the initial model, suggested modification indices will be evaluated for theoretical soundness. Only modifications supported by theory will be considered in the re-specification of the model. Furthermore, in the event that a three-factor model does not fit the data, we will consider theoretically plausible alternative CFA models for adequacy of fit. Not only is this considered best practice in latent variable modelling analyses but personality inventories have a known pattern of poor performance on CFAs (Hopwood & Donnellan, 2010), thus the likelihood of occurrence is reasonable. Thus, a one-factor CFA (i.e., general factor of psychopathy) with the indicator variables being comprised of 10 subscales on the YPI (dishonest charm, grandiosity, lying, manipulation, callousness, unemotionality, remorselessness, impulsiveness, thrill seeking, and irresponsibility) would be analyzed. If the one-factor model proved an acceptable fit to the data, the steps detailed above on measurement invariance will be conducted next. All decisions, whether in terms of re-specification of a model or analyzing an alternative latent factor model, will be based on theoretical implications and will be thoroughly explained in the results section.

## CHAPTER IV

### Results

#### Preliminary Analyses

Data from the 12-month timepoint was used for analyses as this timepoint yielded the highest response rate on the YPI with the least amount of missing data. The dataset contained 1,354 cases, or participants, across two sites. First, the dataset was analyzed for univariate outliers by converting each item score into a z-score. No scores were determined to be  $>3.29$  or  $<-3.29$ , the definitional thresholds specified by Tabachnick and Fidell (2013) to be an extreme value falling outside of the expected population values (i.e., an univariate outlier). Therefore, no data was eliminated. The second preliminary analysis was to examine for multivariate normality using Mahalanobis distance. Using SPSS version 25, all 50 items from the YPI were analyzed to identify multivariate outliers by computing the distance between individual item score and the multivariate mean or the centroid. Based on a significance level of  $<.001$ , 138 cases were determined to be significantly different than the centroid; therefore, these cases were removed from further analyses. In addition, 94 cases were determined to have data missing, rendering further analysis impossible. These cases were also removed.

Next, using the procedures outlined by Penson et al. (2018), the remaining 1,260 cases were screened for invalid protocols using the Screening Procedure for Inconsistent or Careless Item Endorsement (SPICIE) scale. Using the eight item pairings as suggested by the authors, the sum of the absolute value of the difference between each item pair was calculated. Cut-off scores that resulted in a value  $\geq 9$  signified an invalid protocol. Of the possible 1,260 cases, 23 participants had data missing from one or more item

pairings, rendering calculations of SPICIE scores impossible. Therefore, these 23 cases were removed from further analyses. In addition, 54 cases had total SPICIE scale scores  $\geq 9$ , suggesting an overall invalid protocol; these cases were also eliminated from the final dataset. Further analyses were completed on the remaining 1,045 cases from the 12-month time point. See Table 1 for item pairings and Table 2 for descriptive statistics on SPICIE scores for the present sample.

**TABLE 1***SPICIE Item Pairings*

Scale	Item Pairs and Descriptions
Grandiose/ Manipulative Scale (GM)	Items 6 and 20 <i>It's easy for me to charm and seduce others to get what I want from them.</i> <i>It's easy for me to manipulate people.</i>
	Items 7 and 47 <i>It's fun to make up stories and try to get people to believe them.</i> <i>I like to spice up and exaggerate when I tell about something.</i>
	Items 11 and 31 <i>I can make people believe almost anything.</i> <i>To get people to do what I want, I often find it efficient to con them.</i>
	Items 15 and 27 <i>I am good at getting people to believe in me when I make something up.</i> <i>When someone asks me something, I usually have a quick answer that sounds believable, even if I've just made it up.</i>
	Items 24 and 43 <i>Sometimes I lie for no reason, other than because it's fun.</i> <i>Sometimes I find myself lying without any particular reason.</i>
Callous/ Unemotional Scale (CU)	Items 38 and 46 <i>When I need to, I use my smile and my charm to use others.</i> <i>It has happened that I've taken advantage of (used) someone in order to get what I want.</i>
	Items 12 and 25 <i>I think that crying is a sign of weakness, even if no one sees you.</i> <i>To be nervous and worried is a sign of weakness.</i>
	Items 44 and 48 <i>To feel guilty and remorseful about things you have done that have hurt other people is a sign of weakness.</i> <i>To feel guilt and regret when you have done something wrong is a waste of time.</i>

**TABLE 2***SPICIE Score Frequency Statistics*

Total Scale Score	Frequency	Percent	Cumulative Percent
0	132	12.0	12.0
1	105	9.5	21.5
2	148	13.5	35.0
3	168	15.3	50.3
4	161	14.6	64.9
5	133	12.1	77.0
6	102	9.3	86.3
7	58	5.3	91.6
8	38	3.5	95.1
≥9	54	4.9	100.0
Total	1099	100.0	

**Confirmatory Factor Analysis**

A confirmatory factor analysis (CFA) was conducted with Mplus 8.8. Model fit was inspected using the chi-square ( $\chi^2$ ) test of exact fit; however, because  $\chi^2$  and its corresponding  $p$ -value are highly affected by sample size, it is not uncommon to have a significant  $\chi^2$  test statistic notwithstanding adequate model fit (Kline, 2016). Therefore, the Root Mean Square Error of Approximation (RMSEA) and its confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residual (SRMR) were examined as well. Good fit was defined as RMSEA < 0.05, CFI > 0.95, TLI  $\geq$  0.95, and the SRMR < 0.08 (Kline, 2016).

Subscale data was used to investigate the underlying factor structure of the YPI in the respective sample. Of the 50 items comprised by the YPI, subscales (five items per subscale) can further be delineated into 10 distinct constructs: dishonest charm, grandiosity, lying, manipulation, callousness, unemotionality, remorselessness, impulsiveness, thrill seeking, and irresponsibility. In the hypothesized factor structure,

the 10 subscales will map onto three latent variables: the Grandiose/Manipulative factor (the interpersonal dimension) is comprised of subscales dishonest charm, grandiosity, lying, and manipulation (a total of 20 items); the Callous/Unemotional factor (the affective dimension) is comprised of subscales remorselessness, unemotionality, and callousness (a total of 15 items); and the Impulsive/Irresponsible factor (the behavioral dimension) is comprised of the subscales thrill seeking, impulsiveness, and irresponsibility (a total of 15 items).

The data was analyzed based on a three-factor model: the Grandiose/Manipulative factor, the Callous/Unemotional factor, and the Impulsive/Irresponsible factor. All indicators were significantly related to its respected latent variable:

Grandiose/Manipulative (estimates ranging from  $\beta = .58$  to  $\beta = .94$ ), Callous/Unemotional ( $\beta = .24$  to  $\beta = .86$ ), and Impulsive/Irresponsible ( $\beta = .69$  to  $\beta = .79$ ). See Figure 1 for a path model of the latent factor structure. Path diagrams were created with Amos, version 27. The full measure model demonstrated acceptable fit,  $\chi^2(32) = 277.421$ ,  $p < .001$ , CFI = 0.957, TLI = 0.939, SRMR = 0.041, and RMSEA = 0.086, CI [0.077, 0.095]. See Table 3 for factor loadings and model fit statistics.

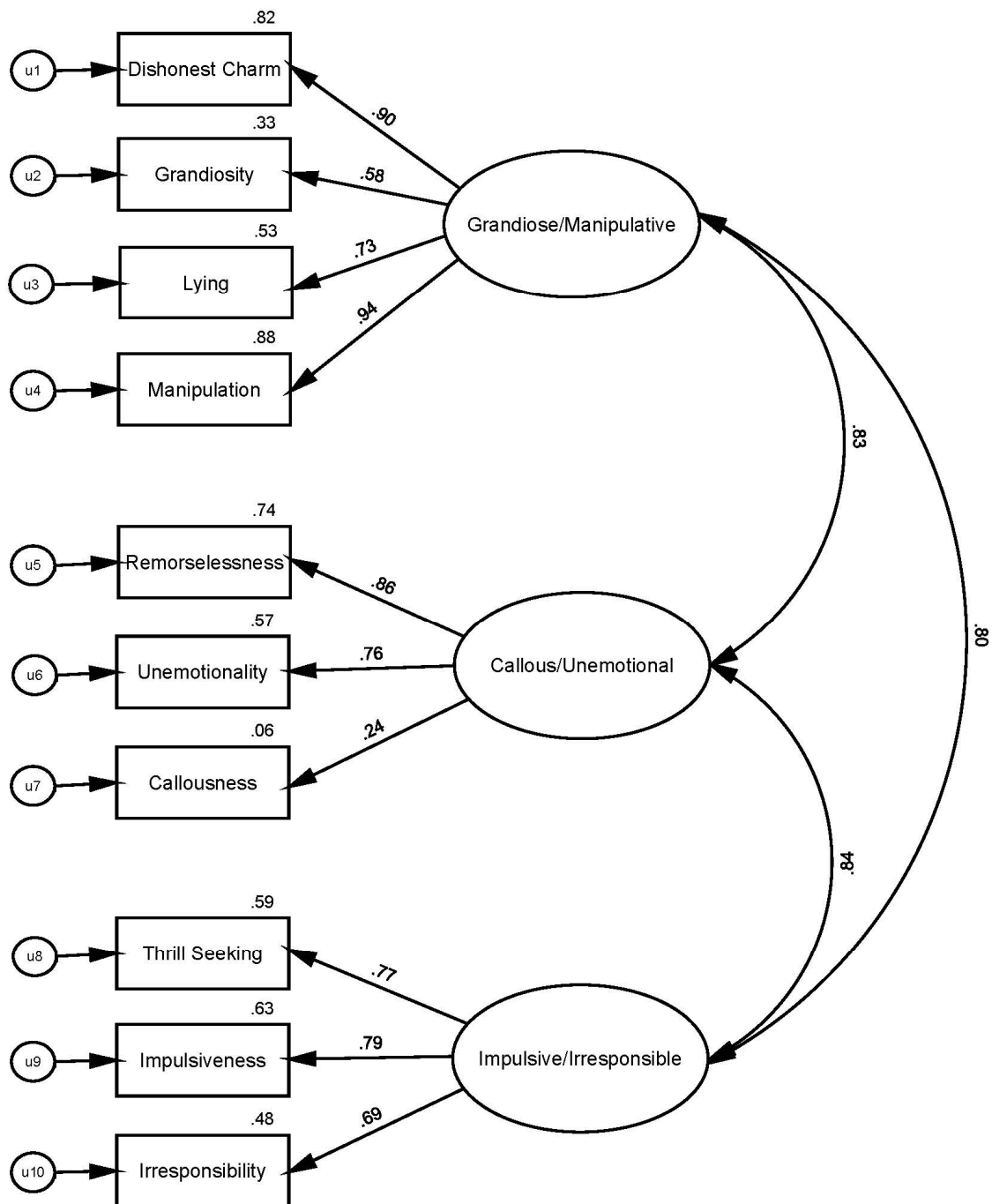
Review of the factor loadings for each of the subscales indicated that the Callousness subscale yielded a particularly weak loading to its respective factor. The subscale was examined for possible coding errors that resulted in inaccurate data. No concerns or errors were noted. A second confirmatory factor analysis was conducted, with the Callousness subscale omitted, in order to determine if there was an improvement in model fit to the sample data. The output from the second CFA resulted in a poorer fit for data. Fit indices for the second CFA were,  $\chi^2(33) = 333.204$ ,  $p < .001$ , CFI = 0.948,



TLI = 0.929, SRMR = 0.063, and RMSEA = 0.093, CI [0.084, 0.102]. Based on the results, it was determined that despite the weak factor loading for the Callousness subscale, the original CFA, which included the subscale, was the best fit for the data. Therefore, subsequent analyses were conducted with the Callousness subscale included.

Figure 1

*Standardized Path Model for the YPI*



**TABLE 3***Factor Loadings and Model Fit Statistics: Three-Factor Model*

Subscales <i>Items</i>	Grandiose/ Manipulative Factor	Callous/ Unemotional Factor	Impulsive/ Irresponsible Factor
	Interpersonal	Affective	Behavioral
Dishonest Charm <i>Items 6, 14, 27, 33, and 38</i>	.90		
Grandiosity <i>Items 10, 19, 30, 37, and 41</i>	.58		
Lying <i>Items 7, 24, 43, 47, and 50</i>	.73		
Manipulation <i>Items 11, 15, 20, 31, and 46</i>	.94		
Remorselessness <i>Items 8, 21, 28, 44, and 48</i>		.86	
Unemotionality <i>Items 2, 25, 36, 39, and 45</i>		.76	
Callousness <i>Items 12, 17, 23, 35, and 49</i>		.24	
Thrill Seeking <i>Items 1, 4, 22, 29, and 42</i>			.77
Impulsiveness <i>Items 3, 9, 18, 26, and 32</i>			.79
Irresponsibility <i>Items 5, 13, 16, 34, and 40</i>			.69

*Note.* *df* = Degrees of Freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

### **Measurement Invariance Across Sex/Gender**

Of the 1,045 cases in the study sample, two participants had missing values for the sex/gender variable. Therefore, these cases were excluded from the measurement invariance across sex/gender analyses. The resulting data set consisted of 1,043 cases

(male,  $n = 895$ ; female,  $n = 148$ ). See Table 4 for demographic information on the study sample.

**TABLE 4**

*Study Sample Demographics*

		Number of Participants	Percentage of Total Sample
Sex/Gender	Male	895	85.7
	Female	148	14.2
	Missing	2	0.1
Race/Ethnicity	White	231	22.1
	Black	407	38.9
	Hispanic	354	34.0
	Other	51	4.9
	Missing	2	0.1
Age at Interview Date	15	129	12.3
	16	198	18.9
	17	324	31.0
	18	305	29.2
	19	87	8.3
	20	1	0.1
Study Site Location	Philadelphia	507	48.5
	Phoenix	537	51.4

***Configural Invariance***

Based on prior research, the extent to which the factor structure of the latent construct of psychopathy is consistent or similar across sex/gender, as measured by clinician-rated (e.g., PCL-R) or self-report measures (e.g., YPI), remains unclear.

Therefore, measurement invariance analyses were conducted to determine at what level of invariance does the YPI, within the respective sample of juvenile offenders, maintain

equality across the two groups of participants: male and female. In order to investigate the proposed hypothesis, that only the least restrictive model will prove invariant across the two groups, the model fit (i.e., configural invariance) was examined. Model indices used to examine good fit within the CFA were also used for the configural model: the Root Mean Square Error of Approximation (RMSEA) and its confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residual (SRMR). The three-factor model demonstrated a close fit,  $\chi^2(63) = 347.395, p < .001$ , CFI = 0.951, TLI = 0.931, SRMR = 0.045, and RMSEA = 0.092, CI [0.083, 0.102]. Table 5 contains fit indices for all measurement invariance analyses conducted across sex/gender.

**TABLE 5***Measurement Invariance Across Sex/Gender*

Invariance Model	$\chi^2$ (df)	RMSEA (90% CI)	CFI	TLI	SRMR
Configural	347.395 (63)	0.092 (0.083, 0.102)	0.951	0.931	0.045
Weak/Metric	356.761 (71)	0.088 (0.079, 0.097)	0.951	0.938	0.052
Strong/Scalar	442.597 (78)	0.095 (0.086, 0.103)	0.937	0.928	0.060

Partial Scalar	$\chi^2$ (df)	p-value
<i>Grandiose/Manipulative factor</i>	12.35 (4)	0.015
<i>Callous/Unemotional factor</i>	70.202 (3)	< 0.001
<i>Impulsive/Irresponsible factor</i>	17.677 (3)	0.001

*Note.* *df* = Degrees of Freedom; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Intervals; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

### ***Weak/Metric Invariance***

Next, the weak measurement invariance model, or metric invariance, was analyzed between the two groups by constraining factor loadings equally across groups and comparing the fit indices for the weak invariance model to the configural invariance model. The chi squared difference test between configural and metric invariance produced a nonsignificant result [ $\chi^2(7) = 9.366, p = 0.227$ ], which indicates the metric model was invariant between the gender categories. Model fit for metric invariance was close fit,  $\chi^2(71) = 356.761, p < .001$ , CFI = 0.951, TLI = 0.938, SRMR = 0.052, and RMSEA = 0.088, CI [0.079, 0.097].

### ***Strong/Scalar Invariance***

In testing for strong invariance, the restriction of constraining item intercepts, in addition to constrained factor loadings, was applied. The chi squared difference test between the configural and scalar invariance models produced a significant result [ $\chi^2(14) = 95.202, p < .001$ ], demonstrating that strong invariance was not supported. Overall model fit indices were less than ideal,  $\chi^2(78) = 442.597, p < .001$ , CFI = 0.937, TLI = 0.928, SRMR = 0.060, and RMSEA = 0.095, CI [0.086, 0.103]. These results suggest that males and females require different levels at a subscale in order to obtain the same level of the underlying latent factor. In order to determine which of the subscales differed in item intercepts between males and females, a partial scalar invariance analysis was conducted.

### ***Partial Strong/Scalar Invariance***

First, in order to evaluate partial measurement invariance, all item intercepts were fully constrained, which served as a baseline model for which subsequent constrained

models were compared. Next, each latent factor (the Grandiose/Manipulative factor, the Callous/Unemotional factor, and the Impulsive/Irresponsible factor) was individually unconstrained, or allowed to vary freely, while the other two factors were held constrained. Results for each unconstrained factor produced a significant *p-value* when comparing chi squared statistics to the baseline model. The rejection of each partial invariance model indicates that there is a difference in the intercepts for the latent subscales, or a difference in the point of origin, between male and female participants (Chen, 2008). In other words, the two groups are not using the Likert-like response scale on the YPI in a similar way (Marsh et al., 2018), in that one group is likely using more extreme responses than the other. Therefore, mean scores from the male and female groups could not be compared in order to draw meaningful conclusions.

### **Measurement Invariance Across Ethnicities**

Of the 1,045 cases in the study sample, 51 participants classified themselves as “Other.” No other descriptive information was provided on classifications given by those who selected “Other.” Additionally, two participants did not have their ethnicities recorded. Therefore, those with missing values or coded as “Other” were excluded from the measurement invariance across ethnicities analyses. The resulting data set consisted of 992 cases (White,  $n = 231$ ; Black,  $n = 407$ ; Hispanic,  $n = 354$ ). See Table 4 for demographic information on the study sample.

### ***Configural Invariance***

According to the proposed hypothesis, prior research demonstrates a limited understanding in the factor structure of psychopathy across different ethnicities, particularly within ethnic groups well represented within the United States. Furthermore,



the current study aimed to expand the research base on whether a particular self-report measure (i.e., YPI), designed to identify psychopathic traits within adolescents, is interpreted similarly within different ethnic groups. Therefore, it was hypothesized that only the least restrictive models (i.e., configural and weak/metric models) would prove invariant. Due to the lack of consensus in the field on invariance within stricter models (i.e., strong/scalar and strict models) (Veen et al., 2011; Zwaanswijk et al., 2017), the results from more strict models, across the three ethnicities (i.e., Black, White, and Hispanic), remained difficult to forecast within the current sample.

In order to investigate the proposed hypothesis that the configural model will be invariant across the three groups, the model fit was examined amongst each ethnic category. Model indices used to examine good fit within the CFA were also used for the configural model: the Root Mean Square Error of Approximation (RMSEA) and its confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residual (SRMR). Overall, the three-factor model demonstrated a good fit,  $\chi^2(96) = 303.978$ ,  $p < .001$ , CFI = 0.962, TLI = 0.947, SRMR = 0.043, and RMSEA = 0.081, CI [0.071, 0.091]. Table 6 contains fit indices for all measurement invariance analyses conducted across ethnicities.

**TABLE 6***Measurement Invariance Across Ethnicities*

Invariance Model	$\chi^2$ (df)	RMSEA (90% CI)	CFI	TLI	SRMR
Configural	303.978 (96)	0.081 (0.071, 0.091)	0.962	0.947	0.043
Weak/Metric	337.230 (110)	0.079 (0.070, 0.089)	0.959	0.949	0.060
Partial Metric	$\chi^2$ (df)	p-value			
White, Black Ethnicities					
<i>Grandiose/Manipulative factor</i>	17.649 (4)	0.001			
<i>Callous/Unemotional factor</i>	13.265 (5)	0.021			
<i>Impulsive/Irresponsible factor</i>	23.653 (5)	< 0.001			
White, Hispanic Ethnicities					
<i>Grandiose/Manipulative factor</i>	7.582 (3)	0.055			
<i>Callous/Unemotional factor</i>	5.217 (2)	0.074			
<i>Impulsive/Irresponsible factor</i>	1.256 (2)	0.534			
Black, Hispanic Ethnicities					
<i>Grandiose/Manipulative factor</i>	3.257 (4)	0.516			
<i>Callous/Unemotional factor</i>	6.968 (5)	0.223			
<i>Impulsive/Irresponsible factor</i>	8.080 (5)	0.152			

Scalar to Configural	$\chi^2$ (df)	p-value
Black, Hispanic Ethnicities	70.859 (14)	< 0.001
White, Hispanic Ethnicities	31.853 (14)	0.042
Partial Scalar	$\chi^2$ (df)	p-value
Black, Hispanic Ethnicities		
<i>Grandiose/Manipulative factor</i>	49.107 (4)	< 0.001
<i>Callous/Unemotional factor</i>	13.258 (3)	0.004
<i>Impulsive/Irresponsible factor</i>	8.037 (3)	0.045
White, Hispanic Ethnicities		
<i>Grandiose/Manipulative factor</i>	10.779 (4)	0.029
<i>Callous/Unemotional factor</i>	9.417 (3)	0.024
<i>Impulsive/Irresponsible factor</i>	17.311 (3)	0.001

Note. *df* = Degrees of Freedom; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Intervals; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

### ***Weak/Metric Invariance***

Next, the weak/metric invariance was investigated between the three groups by constraining factor loadings equally across groups and comparing the fit indices for the weak invariance model to the configural invariance model. The chi squared difference test between configural and metric invariance models produced a significant result [ $\chi^2(14) = 33.253, p = 0.002$ ], indicating metric invariance was not established. In other words, a unit increase on a subscale, across any or potentially all ethnic groups, was not matched as a proportionate unit increase in the level of the latent construct of psychopathy. This implies that individuals within the groups do not attribute the same meaning to the latent factors. In order to determine which of the subscales differed in factor loadings across ethnicities, a partial metric invariance analyses were conducted, individually comparing one ethnic group to another ethnic group.

### ***Partial Weak/Metric Invariance***

First, in order to evaluate partial measurement invariance, all factor loadings were fully constrained, which served as a baseline model for which subsequent constrained models were compared. Next, each subscale's (the Grandiose/Manipulative factor, the Callous/Unemotional factor, and the Impulsive/Irresponsible factor) factor loadings were individually unconstrained, comparing one group to one other group. A total of three partial metric invariance analyses were run. The first analysis compared White to Black ethnic groups, examining each factor loading separately. All subscales proved to be variant between these two groups; meaning, there was a significant difference between how White and Black groups responded to items within the YPI. Results on the chi-squared difference tests were: the Grandiose/Manipulative factor,  $\chi^2(4) = 17.649, p =$

0.001; the Callous/Unemotional factor,  $\chi^2(5) = 13.265, p = 0.021$ ; the Impulsive/Irresponsible factor,  $\chi^2(5) = 23.653, p = < 0.001$ .

The second analysis compared White and Hispanic ethnic groups, with no significant differences revealed across any of the factor loadings for each of the subscales. Results on the chi-squared difference tests were: the Grandiose/Manipulative factor,  $\chi^2(3) = 7.582, p = 0.055$ ; the Callous/Unemotional factor,  $\chi^2(2) = 5.217, p = 0.074$ ; the Impulsive/Irresponsible factor,  $\chi^2(2) = 1.256, p = 0.534$ . Lastly, Black and Hispanic groups were compared in a partial metric analysis. Results were similar to the second analysis, in that metric invariance was supported between Black and Hispanic group models. Results on the chi-squared difference tests were: the Grandiose/Manipulative factor,  $\chi^2(4) = 3.257, p = 0.516$ ; the Callous/Unemotional factor,  $\chi^2(5) = 6.968, p = 0.223$ ; the Impulsive/Irresponsible factor,  $\chi^2(5) = 8.080, p = 0.152$ . Because comparisons between 1) White and Hispanic and 2) Black and Hispanic groups resulted in metric invariance, both groupings will be investigated with more restrictive models (i.e., scalar invariance).

### ***Strong/Scalar Invariance***

In testing for strong invariance, the restriction of constraining item intercepts, in addition to constrained factor loadings, was applied. For the Black and Hispanic comparison, the chi-squared difference test between the configural and scalar invariance models produced a significant result [ $\chi^2(14) = 70.859, p < 0.001$ ], demonstrating that strong invariance was not supported. These results suggest that the means of both groups, those identifying as Black and those identifying as Hispanic, could not be compared due to differences observed in the subscale intercepts, or the points of origin. As for the

White and Hispanic group scalar invariance testing, the chi-squared difference test between the configural and scalar invariance models also produced a significant result [ $\chi^2(14) = 31.853, p < 0.05$ ]. Thus, again demonstrating that strong invariance was not supported. Partial scalar invariance analyses were conducted in order to determine which of the subscales differed in item intercepts for 1) Black and Hispanic group and 2) the White and Hispanic comparison group.

### ***Partial Strong/Scalar Invariance***

Just as in prior partial scalar invariance analyses, the first step was to fully constrain all item intercepts, using that resulting model as baseline for which subsequent constrained models were compared to. Next, each latent factor (the Grandiose/Manipulative factor, the Callous/Unemotional factor, and the Impulsive/Irresponsible factor) was individually unconstrained, or allowed to vary freely, while the other two factors were held constrained. Results for each unconstrained factor produced a significant *p-value* when comparing chi-squared statistics to the baseline model, across the 1) White and Hispanic comparison group and 2) the Black and Hispanic grouping. The rejection of each test of partial invariance suggests that all ethnic groups from the present sample present with significantly different intercepts on each latent factor. See Table 6 for fit indices.

## CHAPTER V

### Discussion

#### General Discussion

The present study investigated the extent to which the YPI is measuring latent factors of psychopathy similarly/consistently across different groups of adolescents involved in the criminal justice system. One of the primary objectives of the study was to determine if the underlying factor structure for the current sample is consistent with the majority of other findings in past research. Specifically, whether a confirmatory factor analysis also reveals a three-factor model of psychopathy and if the factors represent interpersonal, affective, and behavioral factors. In addition, this study explored to what extent is the YPI an unbiased measure of psychopathy in adolescents and, if bias was detected, which groups were affected. Specific aims were to investigate measurement invariance amongst two groupings, sex/gender (male and female) and ethnicity (White, Black, and Hispanic). Recent findings (Colins et al., 2017; Pihet et al., 2014; Yang et al., 2019) suggested only the least restrictive models would maintain invariance within our sample, with more strict measurement models producing differences amongst groups. It was unclear from the prior literature at which levels of measurement models would become invariant as most studies had not investigated the YPI beyond weak/metric invariance models. Only one study to date has demonstrated strong/scalar invariance across different ethnic and sex/gender groups (Zwaanswijk et al., 2017). However, there were only two ethnic groups (Dutch vs. non-Dutch) included in the sample. Thus, restricting firm predictions as to how measurement invariance models may act when analyzed within different ethnic groups (e.g., Black, Hispanic, Asian). Therefore, the

hypotheses from the current study were that measurement invariance would be found at a configural and weak invariance models across ethnicities and only a configural model would be invariant across sex/gender. It was unclear how measurement invariance models would perform in more restrictive models.

### **Factor Structure**

The issue of the underlying factor structure that accurately represents psychopathy as a construct was at the forefront of the present study, as there has been variability in factor structures across different measures of psychopathy (PCL-R, APSD, YPI, and the SRP-SF). The findings from this study found that the three-factor model, consisting of an interpersonal dimension (the Grandiose/Manipulative factor), an affective dimension (the Callous/Unemotional factor), and a behavioral dimensional (the Impulsive/Irresponsible factor), produced the closest fit to what may be operationalized as the underlying factor structure of psychopathy, as measured by the self-report measure, the YPI. Results from the present study, that a three-factor model best represents the latent construct of psychopathy, reflects comparable findings within adult samples (Jackson et al., 2002; Warren et al., 2003). The similarity between findings from this study and from results within adult samples appears to support the possibility that the factor structure of psychopathy may remain consistent across a lifespan, as debated within the literature concerning the long-term stability of conceptualizing psychopathy across developmental stages (Skeem et al., 2011). Meaning, it would appear that there is some legitimacy to applying and conceptualizing what has been learned in adult populations concerning psychopathy downwards into adolescent samples. Future research could assess the



relative stability of psychopathic traits, from childhood to the theorized stabilization of personality in early adulthood (i.e., early 30s) (Skeem et al., 2011).

Despite the results regarding overall model fit being consistent with previous findings, the overall model was only deemed an acceptable fit due to higher-than-expected RMSEA result ( $RMSEA = .086$ ). Research has suggested that RMSEA values less than 0.05 are considered good, values between 0.05 and 0.08 are acceptable, values between 0.08 and 0.1 are marginal, and values greater than 0.1 are poor (Fabrigar et al., 1994). Although the RMSEA value is considered marginal in this present study, the remaining fit indices (TLI, CFI, and the SRMR) all yielded results suggesting good fit between the data in the present study and hypothesized model. Therefore, results from the CFA suggest the three-factor structure is a good fit for the current sample. This finding supports the hypothesis that the YPI has a three-factor latent structure of psychopathy. However, researchers should continue to assess factor structures for psychopathy, as there is dissent within the field as to how best to conceptualize the underlying factor structure (Dotterer et al., 2017; Forth et al., 2003; Hare et al., 1990; Harpur et al., 1989; Harris et al., 1994; Kosson et al., 2013; Neumann & Hare, 2008; Neumann et al., 2012; Zwaanswijk et al., 2017).

In addition, the Callousness subscale of the YPI yielded a noticeably weaker factor loading ( $\beta = .24$ ) in comparison to the other nine subscales (estimates ranging from  $\beta = .58$  to  $\beta = .94$ ). An additional CFA was conducted without the subscale included to determine if exclusive of the subscale yielded better results. However, the second CFA concluded with fit indices that were a poorer fit to the data than the original model. After eliminating the possibility that an error in the coding or scoring of the subscale was the

source of the low loading, additional explanations as to why the subscale was functioning so poorly was explored.

Upon review of the relevant literature, a noticeable trend emerged that the Callousness subscale of the YPI has a history of not performing as intended. In a study examining the construct validity of the YPI, Poythress et al. (2006) found the Callousness subscale demonstrated weak internal consistency ( $\alpha = .36$ ) and had an unstandardized estimate of  $\beta = .26$ . Additionally, Skeen and Cauffman (2003) examined the internal consistency of the YPI and similarly found the callousness subscale to be performing at an unacceptable level. The authors of the two aforementioned studies reported the importance of measuring callousness when assessing for psychopathy, noting it to be essential facet within the affective dimension, however raised serious concerns regarding the adequacy of the Callousness subscale in its current state. Similar results regarding unacceptable internal consistency values for the Callousness subscale has been found in several other studies (Colins et al., 2014; Dolan et al., 2006b; Hillege et al., 2010; Pechorro et al., 2015) or poor factor loading to the affective latent factor (Munoz et al., 2019; Zwaansijk et al., 2017).

However, not all studies on the psychometric properties of the YPI have found the Callousness subscale to be performing at an inferior standard. Pihet et al. (2014) found the Callousness subscale had a lower internal consistency compared to the other nine subscales but with Cronbach alpha at an acceptable value (community sample,  $\alpha = .68$ ; institutionalized sample,  $\alpha = .58$ ). Similar results were found in clinical samples (Andershed, 2007) and in community samples of adolescents (Declercq et al., 2009; Larsson et al., 2009; Zwaansijk et al., 2017). Overall, the Callousness subscale of the YPI

has demonstrated unsatisfactory performance across multiple studies. The psychopathy field would benefit from further exploration as to why this subscale is inadequately assessing callous traits in juveniles and if, at all, poorer performance is linked to a particular sample (e.g., forensic, community, clinical) or another variable (e.g., age, gender, education level).

### **Measurement Invariance Analyses**

This study served as an examination of not only the factor structure of psychopathy but also how well psychopathy is measured equivalently across multiple groups of adolescents. The results from the study are novel as very little research on measurement invariance has been conducted with justice-involved juvenile populations (Colins et al., 2017; Pechorro et al., 2015; Yang et al., 2019), with no known studies specifically examining invariance across the three predominate ethnicities found within the United States (White, Black, and Hispanic ethnicities) and with little research conducted that includes adolescent female offenders. Due to the paucity of research investigating measurement invariance within juvenile forensic samples, it was difficult to predict how restrictive measurement invariance models would perform within the present sample. Therefore, the findings from the present study represent an advance in our understanding of the measurement of adolescent psychopathy as measured by the self-report YPI.

Similar to previous research, configural invariance analyses held invariant across both gender and ethnic groups in the current study. Meaning, different groups of individuals broadly report the same latent factor structure across the same three dimensions found (i.e., interpersonal, affective, and behavioral). However, more

restrictive models fared differently across gender and ethnicity. Surprisingly, sex/gender maintained equivalence in factor loadings. Results from the present study suggest that adolescents identifying as male and female report consistency in the underlying meaning of the items. However, sex/gender groups had different intercepts (i.e., lack of scalar invariance) on each of the latent dimensions (i.e., affective, interpersonal, and behavioral). Based on these results, it is unclear if the differences between males and females in the present study are attributable to true group differences or to measurement bias (Chen, 2008).

According to Chen (2008), there are several possible reasons for this type of invariance to occur. The first possibility could be social desirability, or the bias that occurs when someone responds to questions by underreporting socially undesirable attitudes and behaviors and/or over-reporting desirable traits (Teh et al., 2023). For example, for the item “I think crying is a sign of weakness, even if no one sees you” may actually be a 2 out of 4 for any of the male adolescents in the sample. However, due to the pressures of gender norms (i.e., social desirability) a male adolescent may provide a 1 as a response. Thus, social desirability could produce an inaccurate depiction of an individual’s true value on any particular item within the latent factor being assessed. Thus, the result could produce differences in the scale intercept origin between two groups of individuals that is a result of extraneous variable and not necessarily attributable to true group differences on the construct being measured.

Using the example above illustrates how social and cultural factors play a role in how an individual may interpret or understand the meaning of a question asked on a self-report measure. It seems plausible that societal expectations on how each sex/gender

must act or think likely plays a role in observed group differences on this measure. This is apparent for all the dimensions when thinking about the socialization of each sex/gender within the United States. In continuation with the example used previously, males are often taught that crying is a sign of weakness or not to express emotions, whereas females are socialized that crying is acceptable and expected. Using this example alone could explain the group differences on scalar invariance models, or more specifically on the behavioral dimension, though gender socialization is likely just as applicable to the interpersonal and affective dimensions as well.

As for the ethnic invariance models, results from the analyses were more complicated when compared to the sex/gender analyses. Similarly, the factor structure (i.e., configural invariance) was consistent across the three ethnic groups. However, metric invariance was partially supported across ethnicity. Results showed that a group difference only existed between White and Black individuals, across all three factors. This means that each factor is more closely related to the latent construct of psychopathy for one group than in the other group (Putnick & Bornstein, 2016). However, this was not the case when comparing Black to Hispanic individuals and White to Hispanic individuals. Scalar measurement invariance was investigated within these last two groups. Results from the scalar invariance indicated that neither of the groups demonstrated scalar invariance across any of the factors. This again signifies that observed group differences are unrelated to latent factors. Findings from this particular analysis implies that psychopathy is really only measured equally in ethnic groups, on the YPI, at a broad level or at a factor structure level.

When considering explanations for the difference in factor loadings (i.e., metric invariance) between only the White and Black groups, Chen (2008) suggests that item content may be interpreted differently amongst different cultures. For example, consider the item from the Callous/Unemotional scale, “I don’t understand how people can be touched enough to cry by looking at things on TV or movie.” The idiom “touched,” or to be affected by some emotion, may be understood or interpreted differently between groups of adolescents. For example, the White group of adolescents may generally interpret that question as someone greatly affected by an emotion, therefore provide a response appropriate to their understanding. Conversely, an individual from the Black group of adolescents may understand the question to be insinuating a lesser intensity of emotion experienced and provide a response appropriate for their cultural understanding and significantly different than that of the White participants. Therefore, the strength of the factor loading between the item and the subscale factor could indicate group differences based on the way in which individuals of the different groups interpret the items.

Another possible explanation for the observed differences between White and Black groups in the sample would be the tendency for one group to use or avoid extreme responses on items (Chen, 2008). For example, perhaps the adolescents in the White group display a tendency to select more extreme values on items, such as 1s and 4s. Whereas, individuals in the Black group do not display this tendency, selecting less extreme values such as 2s and 3s. Previous studies suggest that individuals from some ethnic groups do engage in extreme response sets more than other ethnic groups. Clarke (2000) investigated extreme response style across different cultures and found that Black

and Hispanic individuals displayed a tendency to utilize more extreme responses on Likert-like scales when compared to non-Black or non-Hispanic identifying individuals. The results from the Clarke (2000) study indicated that extreme response style alone contributed to statistically significant group difference and when ethnicity was controlled for, the group differences were no longer present.

Similarly, Marin et al. (1992) found that Hispanic individuals were more likely than non-Hispanic White individuals to display an extreme response style. Furthermore, in a meta-analysis conducted on extreme response style and variables that may contribute to group differences, authors found support for racial differences in response styles (Batchelor & Miao, 2016). Results from the study indicated the largest group differences were between Black and White individuals, with Black individuals providing more extreme responses. To a lesser extent, but still significantly different, the authors concluded that Hispanic individuals also engage in slightly more extreme responding than their White counterparts. Overall, prior research has shown that tendencies in selecting extreme ratings exists across different ethnic groups. It is possible that this phenomenon could account for the lack of metric invariance between the White and Black individuals, but not between the other two groups (White and Hispanic individuals; Hispanic and Black individuals) who reported congruent understanding of the items.

### **Study Limitations**

A significant strength of the present study is the large sample size with a relatively diverse group of ethnicities. Most studies on the YPI have consisted of much smaller sample sizes, do not include female participants, nor do the studies examine more than two ethnic groups. Despite the current sample including the neglected populations

previously excluded, the female group ( $n = 148$ ) in the current sample is small when compared to the male group ( $n = 895$ ). It would be beneficial to the field of psychology to further investigate the factor structure of psychopathy, using more balanced sample sizes or with additional studies conducted within the female population. Additionally, juveniles in the current sample consisted predominately of individuals charged with felony offenses, with a portion of the sample (15%) exclusively charged with drug related offenses. However, a greater variety of offenses, including misdemeanors, or the level of justice involvement (e.g., first offenses, third offenses, etc.) would possibly be a better representation of a juvenile forensic sample, and future research on measurement invariance may focus on groups of justice-involved adolescents varying in the severity of their charges or dispositions.

Furthermore, the ages of the participants at the 12-month time point vary from 15 years old ( $n = 129$ ) to 20 years old ( $n = 1$ ). The range of ages is large and could possibly be a confounding variable when considering if age can influence how an individual may perceive and/or respond to a particular item. For instance, would an 18-year-old individual read and interpret items on impulsivity in similar manner as a 15-year-old? Future research on the influence of age, across gender and ethnicities, in self-report measures of psychopathy could potentially shed light on if this variable is an important factor to be considered. Lastly, the operationalization of the latent structure of psychopathy (the affective, interpersonal, and behavioral dimensions) is defined by the use of a single measure (YPI) in the current study. Future research could explore if this factor structure is replicated with other self-report measures of psychopathy (e.g., APSD, YPI-S), across a variety of settings/environment (e.g., forensic, community, and clinical),



ages (e.g., children, adolescents, adults, and geriatric), and within countries outside of the United States. Furthermore, while the present study included more ethnic groups than most prior research on measurement invariance models within psychopathy, three groups is not nearly comprehensive enough. As such, the results from this study only expands the knowledge base for those ethnicities included and may not represent results if additional ethnicities were included (e.g., Asian, American Indian).

### **Conclusion**

Findings from the present study indicate that the factor structure of psychopathy is similar to that found in adult and community samples, both within clinician-rated and self-reported measures. Overall, the YPI is useful at broadly detecting the three dominant dimensions of psychopathy and appears to be interpreted consistently across groups of adolescents for the most part. However, lack of scalar invariance across both sex/gender and ethnicity implies measurement nonvariance may limit the possibility of generalizing across different groups when it comes to making mean comparisons on subscales. The results from this study adds to the foundation of knowledge surrounding psychopathy research, more specifically as it relates to measurement invariance on a self-report measure of psychopathy in adolescent populations. Additionally, results show that psychopathy is not being measured equally amongst different groups of adolescents using the YPI. Implications as to why group differences were explored and included possibilities including, but limited to, extreme response style and differences in the understanding/interpretation of items. While the results from the study added to the extant foundation of research on psychopathy, it also highlighted gaps in our understanding, such as factor structure stability across developmental stages. Considering

the limitations of this study and directions for future research, it is the hope of the present authors that self-report measures of psychopathy continued to be explored as a viable option in measuring psychopathic traits in children and adolescents.

## REFERENCES

- Adjorlolo, S., & Watt, B. D. (2019). Factorial and convergent validity of the Youth Psychopathic Traits Inventory-Short Version in Ghana. *International Journal of Psychology, 54*(3), 388–396. [https://doi: 10.1002/ijop.12468](https://doi.org/10.1002/ijop.12468)
- American Psychiatric Association. (1968). Personality Disorders. In *Diagnostic and statistical manual of mental disorders* (2nd ed.).
- Andershed, H., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in nonreferred youths: A new assessment tool. In E. Blaauw & L. Sheridan (Eds.), *Psychopaths: Current International Perspectives* (pp. 131-158). Elsevier.
- Andershed, H., Hodgins, S., & Tengstrom, A. (2007). Convergent validity of the Youth Psychopathic Traits Inventory (YPI): Association with the Psychopathy Checklist: Youth Version (PCL: YV). *Assessment, 14*(2), 144 -154.
- Batchelor, J. H., & Miao, C. (2016). Extreme response style: A meta-analysis. *Journal of Organization Psychology, 16*(2), 51- 62.
- Bauer, D. L., Whitman, L. A., & Kosson, D. S. (2011). Reliability and construct validity of Psychopathy Checklist: Youth Version scores among incarcerated adolescent girls. *Criminal Justice and Behavior, 38*(10), 965–987.  
<https://doi.org/10.1177/0093854811418048>
- Bijttebier, P., & Decoene, S. (2009). Assessment of psychopathic traits in children and adolescents: Further validation of the Antisocial Process Screening Device and the Childhood Psychopathy Scale. *European Journal of Psychological Assessment, 25*(3), 157-163. <https://doi.org/10.1027/1015-5759.25.3.157>

- Blais, J., Solodukhin, E., & Forth, A. E. (2014). A meta-analysis exploring the relationship between psychopathy and instrumental versus reactive violence. *Criminal Justice and Behavior, 41*(7), 797 – 821.  
<https://doi.org/10.1177/0093854813519629>
- Bolt, D. M., Hare, R. D., Vitale, J. E., & Newman, J. P. (2004). A multigroup item response theory analysis of the Psychopathy Checklist-Revised. *Psychological Assessment, 16*(2), 155-168. <https://doi.org/10.1037/1040-3590.16.2.155>
- Boonmann, C., Perez, T., Schmid, M., Fegert, J. M., Jauk, E., & Schmeck, K. (2020). Psychometric properties of the German version of the Youth Psychopathic Traits Inventory - Short Version. *BMC Psychiatry, 20*(1). <https://doi.org/10.1186/s12888-020-02943-z>
- Brinkley, C. A., Diamond, P. M., Magaletta, P. R., & Heigel, C. P. (2008). Cross-validation of Levenson's psychopathy scale in a sample of federal female inmates. *Assessment, 15*, 464 – 482. <https://doi.org/10.1177/1073191108319043>
- Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd ed.). Lawrence Erlbaum Associates.
- Cale, E. M., & Lilienfeld, S. O. (2002). Sex differences in psychopathy and antisocial personality disorder. A review and integration. *Clinical Psychology Review, 22*(8), 1179–1207. [https://doi.org/10.1016/S0272-7358\(01\)00125-8](https://doi.org/10.1016/S0272-7358(01)00125-8)
- Chen, F. F. (2008). What happens if we compare chopsticks with forks? The impact of making inappropriate comparisons in cross-cultural research. *Journal of Personality and Social Psychology, 95*(5), 1005–1018.  
<https://doi.org/10.1037/a0013193>

- Clarke III, I. (2000). Extreme response style in cross-cultural research: An empirical investigation. *Journal of Social Behavior & Personality, 15*(1), 137–152.  
<https://doi.org/10.1177/002202217400500407>
- Cleckley, H. (1941). *The mask of sanity* (1st ed.). Mosby.
- Cleckley, H. (1976). *The mask of sanity* (5th ed.). Mosby.
- Colins, O. F., Bijttebier, P., Broekaert, E., & Andershed, H. (2014). Psychopathic-like traits among detained female adolescents reliability and validity of the Antisocial Process Screening Device and the Youth Psychopathic Traits Inventory. *Assessment, 21*(2), 195–209.  
<https://doi.org/10.1177/1073191113481997>
- Colins, O. F., Fanti, K. A., Andershed, H., Mulder, E., Salekin, R. T., Blokland, A., & Vermeiren, R. R. J. M. (2017). Psychometric properties and prognostic usefulness of the Youth Psychopathic Traits Inventory (YPI) as a component of a clinical protocol for detained youth: A multiethnic examination. *Psychological Assessment, 29*(6), 740–753. <https://doi.org/10.1037/pas0000437>
- Cooke, D. J., Kosson, D. S., & Michie, C. (2001). Psychopathy and ethnicity: Structural, item, and test generalizability of the Psychopathy Checklist – Revised (PCL-R) in Caucasian and African American participants. *Psychological Assessment, 13*(4), 531–542. <https://doi.org/10.1037/1040-3590.13.4.531>
- Cooney, N. L., Kadden, R. M., & Litt, M. D. (1990). A comparison of methods for assessing sociopathy in male and female alcoholics. *Journal of Studies on Alcohol, 51*, 42–48. <https://doi.org/10.15288/jsa.1990.51.42>

- Debowska, A., Boduszek, D., Kola, S., & Hyland, P. (2014). A bifactor model of the Polish version of the Hare Self-Report Psychopathy Scale. *Personality and Individual Differences, 69*, 231–237. <https://doi.org/10.1016/j.paid.2014.06.001>
- Declercq, F., Markey, S., Vandist, K., & Verhaeghe, P. (2009). The Youth Psychopathic Trait Inventory: Factor structure and antisocial behaviour in non-referred 12–17-year-olds. *Journal of Forensic Psychiatry & Psychology, 20*, 577–594. <https://doi.org/10.1080/14789940802651757>
- Dolan, M., & Rennie, C. (2006). Reliability, validity, and factor structure of the Swedish Youth Psychopathic Trait Inventory in a UK sample of conduct disordered boys. *Journal of Forensic Psychiatry & Psychology, 17*(2), 217–229. <https://doi-org.ezproxy.shsu.edu/10.1080/14789940500497784>
- Dong, L., Wu, H., & Waldman, I. D. (2014). Measurement and structural invariance of the Antisocial Process Screening Device. *Psychological Assessment, 26*(2), 598–608. <https://doi.org/10.1037/a0035139>
- Dotterer, H. L., Waller, R., Neumann, C. S., Shaw, D. S., Forbes, E. E., Hariri, A. R., & Hyde, L. W. (2017). Examining the factor structure of the Self-Report of Psychopathy Short-Form across four young adult samples. *Assessment, 24*(8), 1062 – 1079. <https://doi.org/10.1177/1073191116640355>
- Edens, J. F., Marcus, D. K., Lilienfeld, S. O., & Poythress, N. G. (2006). Psychopathic, not psychopath: Taxometric evidence for the dimensional structure of psychopathy. *Journal of Abnormal Psychology, 115*(1), 131–144. <https://doi.org/10.1037/0021-843X.115.1.131>

- Edens, J. F., Campbell, J. S., & Weir, J. M. (2007). Youth psychopathy and criminal recidivism: A meta-analysis of the Psychopathy Checklist measures. *Law and Human Behavior, 31*, 53–75. <https://doi.org/10.1007/s10979-006-9019-y>
- Edens, J. F., Marcus, D., & Vaughn, M. (2011). Exploring the taxometric status of psychopathy among youthful offenders: Is there a juvenile psychopath taxon? *Law & Human Behavior, 35*(1), 13–24. <https://doi-org.ezproxy.shsu.edu/10.1007/s10979-010-9230-8>
- Fabrigar, L. R., MacCallum, R. C., Wegener, D. T., & Strahan, E. J. (1994). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>
- Feaster, D. J., Robbins, M. S., Henderson, C., Horigian, V., Puccinelli, M. J., Burlew, A. K., & Szapocznik, J. (2010). Equivalence of family functioning and externalizing behaviors in adolescent substance users of different race/ethnicity. *Journal of Substance Abuse Treatment, 38*(Supplement 1), S113–S124. <https://doi.org/10.1016/j.jsat.2010.01.010>
- Flores-Mendoza, C. E., Alvarenga, M. A. S., Herrero, Ó., & Abad, F. J. (2008). Factor structure and behavioural correlates of the Psychopathy Checklist-Revised [PCL-R] in a Brazilian prisoner sample. *Personality and Individual Differences, 45*(7), 584–590. <https://doi.org/10.1016/j.paid.2008.06.016>
- Forth, A. E., Brown, S. L., Hart, S. D., & Hare, R. D. (1996). The assessment of psychopathy in male and female noncriminals: Reliability and validity. *Personality and Individual Differences, 20*, 531–543. [https://doi.org/10.1016/0191-8869\(95\)00221-9](https://doi.org/10.1016/0191-8869(95)00221-9)

- Forth, A. E., Kosson, D. S., & Hare, R. D. (2003). *Hare Psychopathy Checklist: Youth Version*. Multi-Health Systems, Inc.
- Frick, P. J., Bodin, S. D., & Barry, C. T. (2000). Psychopathic traits and conduct problems in community and clinic-referred samples of children: Further development of the Psychopathy Screening Device. *Psychological Assessment, 12*(4), 382-393. <https://doi.org/10.1037/1040-3590.12.4.382>
- Gillen, C. T. A., MacDougall, E. A. M., Forth, A. E., Barry, C. T., & Salekin, R. T. (2019). Validity of the Youth Psychopathic Traits Inventory–Short Version in justice-involved and at-risk adolescents. *Assessment, 26*(3), 479–491. <https://doi-org.ezproxy.shsu.edu/10.1177/1073191117700723>
- Goodwin, B. E., Sellbom, M., & Salekin, R. T. (2015). Elucidating the construct validity of the Antisocial Process Screening Device (APSD) in a sample of young adults. *Journal of Psychopathology and Behavioral Assessment, 37*(1), 1-11. <https://doi.org/10.1007/s10862-014-9444-z>
- Guay, J.-P., Ruscio, J., Knight, R. A., & Hare, R. D. (2007). A taxometric analysis of the latent structure of psychopathy: Evidence for dimensionality. *Journal of Abnormal Psychology, 116*(4), 701-716. <https://doi.org/10.1037/0021-843X.116.4.701>
- Hamburger, M. E., Lilienfeld, S. O., & Hogben, M. (1996). Psychopathy, gender, and gender roles: Implications for antisocial and histrionic personality disorders. *Journal of Personality Disorders, 10*, 41–55. <https://doi.org/10.1521/pedi.1996.10.1.41>
- Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Multi-Health Systems, Inc.



- Hare, R. D., Harpur, T. J., Hakstian, A. R., Forth, A. E., Hart, S. D., & Newman, J. P. (1990). The revised Psychopathy Checklist: Reliability and factor structure. *Psychological Assessment, 2*(3), 338–341. <https://doi.org/10.1037/1040-3590.2.3.338>
- Hare, R. D. (2003). *The Hare Psychopathy Checklist-Revised (PCL-R)* (2nd ed.). Multi-Health Systems, Inc.
- Harpur, T. J., Hakstian, A. R., & Hare, R. D. (1988). Factor structure of the Psychopathy Checklist. *Journal of Consulting and Clinical Psychology, 56*(5), 741–747. <https://doi.org/10.1037/0022-006X.56.5.741>
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment, 1*(1), 6–17. <https://doi.org/10.1037/1040-3590.1.1.6>
- Harris, G. T., Rice, M. E., & Quinsey, V. L. (1994). Psychopathy as a taxon: Evidence that psychopaths are a discrete class. *Journal of Consulting and Clinical Psychology, 62*, 387–397. <https://doi.org/10.1037/0022-006X.62.2.387>
- Hart, S. D., Kropp, P. R., & Hare, R. D. (1988). Performance of male psychopaths following conditional release from prison. *Journal of Consulting and Clinical Psychology, 56*(2), 227. <https://doi.org/10.1037/0022-006X.56.2.227>
- Hart, S. D., Watt, K. A., & Vincent, G. M. (2002). Commentary on Seagrave and Grisso: Impressions of the state of the art. *Law and Human Behavior, 26*(2), 241–245. <https://doi.org/10.1023/A:1014648227688>
- Hildebrand, M., & de Ruiter, C. (2012). Psychopathic traits and change on indicators of dynamic risk factors during inpatient forensic psychiatric treatment. *International*

*Journal of Law and Psychiatry*, 35(4), 276–288. <https://doi-org.ezproxy.shsu.edu/10.1016/j.ijlp.2012.04.001>

Hill, C. D., Neumann, C. S., & Rogers, R. (2004). Confirmatory factor analysis of the Psychopathy Checklist: Screening Version in offenders with Axis I disorders. *Psychological Assessment*, 16(1), 90–95. <https://doi.org/10.1037/1040-3590.16.1.90>

Hillege, S., Das, J., & de Ruiter, C. (2010). The Youth Psychopathic Traits Inventory: Psychometric properties and its relation to substance use and interpersonal style in a Dutch sample of non-referred adolescents. *Journal of Adolescence*, 33, 83–91. <https://doi.org/10.1016/j.adolescence.2009.05.006>

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–59.

Hopwood, C. J., & Donnellan, M. B. (2010). How should the internal structure of personality inventories be evaluated? *Personality and Social Psychology Review*, 14(3), 332–346. <https://doi.org/10.1177/1088868310361240>

Horan, J. M., Brown, J. L., Jones, S. M., & Aber, J. L. (2015). Assessing invariance across sex and race/ethnicity in measures of youth psychopathic characteristics. *Psychological Assessment*, 27(2), 657–668. <https://doi.org/10.1037/pas0000043>

Jackson, D. L., Gillaspay, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods*, 14(1), 6–23. <https://doi.org/10.1037/a0014694>

- Jackson, R. L., Rogers, R., Neumann, C. S., & Lambert, P. L. (2002). Psychopathy in female offenders: An investigation of its underlying dimensions. *Criminal Justice and Behavior, 29*(6), 692–704. <https://doi.org/10.1177/009385402237922>
- Jones, S., Cauffman, E., Miller, J. D., & Mulvey, E. (2006). Investigating different factor structures of the Psychopathy Checklist: Youth Version: Confirmatory factor analytic findings. *Psychological Assessment, 18*(1), 33-48. <https://doi.org/10.1037/1040-3590.18.1.33>
- Kahn, R. E., Byrd, A. L., & Pardini, D. A. (2013). Callous-unemotional traits robustly predict future criminal offending in young men. *Law and Human Behavior, 37*(2), 87–97. <https://doi.org/10.1037/b0000003>
- Kiehl, K. A., & Hoffman, M. B. (2010). The criminal psychopath: History, neuroscience, treatment, and economics. *Jurimetrics, 51*(4), 355–398.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Kosson, D. S., Smith, S. S., & Newman, J. P. (1990). Evaluating the construct validity of psychopathy in Black and White male inmates: Three preliminary studies. *Journal of Abnormal Psychology, 99*(3), 250-259.
- Kosson, D. S., Cyterski, T. D., Steuerwald, B. L., Neumann, C. S., & Walker-Matthews, S. (2002). The reliability and validity of the Psychopathy Checklist: Youth Version (PCL:YV) in nonincarcerated adolescent males. *Psychological Assessment, 14*(1), 97-109. <https://doi.org/10.1037/1040-3590.14.1.97>
- Kosson, D. S., Neumann, C. S., Forth, A. E., Salekin, R. T., Hare, R. D., Krischer, M. K., & Sevecke, K. (2013). Factor structure of the Hare Psychopathy Checklist: Youth

- Version (PCL: YV) in adolescent females. *Psychological Assessment*, 25(1), 71–83. <https://doi.org/10.1037/a0028986>
- Larsson, H., Andershed, H., & Lichtenstein, P. (2006). A genetic factor explains most of the variation in the psychopathic personality. *Journal of Abnormal Psychology*, 115(2), 221–230. <https://doi.org/10.1037/0021-843X.115.2.221>
- Laurell, J., Belfrage, H., & Hellström, Å. (2014). Deceptive behaviour and instrumental violence among psychopathic and non-psychopathic violent forensic psychiatric patients. *Psychology, Crime & Law*, 20(5), 467–479. <https://doi.org/10.1080/1068316X.2013.793341>
- Leistico, A.-M. R., Salekin, R. T., DeCoster, J., & Rogers, R. (2008). A large-scale meta-analysis relating the Hare Measures of Psychopathy to antisocial conduct. *Law and Human Behavior*, 32(1), 28–45. <https://doi.org/10.1007/s10979-007-9096-6>
- Lilienfeld, S. O. (1994). Conceptual problems in the assessment of psychopathy. *Clinical Psychology Review*, 14, 17-38. [https://doi.org/10.1016/0272-7358\(94\)90046-9](https://doi.org/10.1016/0272-7358(94)90046-9)
- Lilienfeld, S. O., & Andrews, B. P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in noncriminal populations. *Journal of Personality Assessment*, 66, 488–524. [https://doi.org/10.1207/s15327752jpa6603\\_3](https://doi.org/10.1207/s15327752jpa6603_3)
- Lilienfeld, S. O., & Hess, T. H. (2001). Psychopathic personality traits and somatization: Sex differences and the mediating role of negative emotionality. *Journal of Psychopathology and Behavioral Assessment*, 23, 11–24. <https://doi.org/10.1023/A:1011035306061>

- Marin, G., Gamba, R. J., & Marin, B. V. (1992). Extreme response style and acquiescence among Hispanics: The role of acculturation and education. *Journal of Cross-Cultural Psychology, 23*(4), 498–509.  
<https://doi.org/10.1177/0022022192234006>
- Marsh, H. W., Guo, J., Parker, P. D., Nagengast, B., Asparouhov, T., Muthén, B., & Dicke, T. (2018). What to do when scalar invariance fails: The Extended Alignment Method for multi-group factor analysis comparison of latent means across many groups. *Psychological Methods, 23*(3), 524–545.  
<https://doi.org/10.1037/met0000113>
- McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods, 7*(1), 64-82.  
<https://doi.org/10.1037/1082-989X.7.1.64>
- Miron, C. D., Satlof-Bedrick, E., & Waller, R. (2020). Longitudinal association between callous-unemotional traits and friendship quality among adjudicated adolescents. *Journal of Adolescence, 81*, 19–26. <https://doi.org/10.1016/j.adolescence.2020.03.010>
- Mokros, A., Neumann, C. S., Stadtland, C., Osterheider, M., Nedopil, N., & Hare, R. D. (2011). Assessing measurement invariance of PCL-R assessments from file reviews of North American and German offenders. *International Journal of Law and Psychiatry, 34*(1), 56–63. <https://doi.org/10.1016/j.ijlp.2010.11.009>
- Munoz, C. G., Abate, A., Sharp, C., & Venta, A. C. (2019). Factor structure and clinical utility of the Youth Psychopathic Traits Inventory in an inpatient sample.

*Psychiatry Research*, 275, 189 – 195.

<https://doi.org/10.1016/j.psychres.2019.03.031>

Neumann, C. S., Hare, R. D., & Newman, J. P. (2007). The super-ordinate nature of the psychopathy checklist-revised. *Journal of Personality Disorders*, 21(2), 102–117.

<https://doi.org/10.1521/pedi.2007.21.2.102>

Neumann, C. S., & Hare, R. D. (2008). Psychopathic traits in a large community sample: Links to violence, alcohol use, and intelligence. *Journal of Consulting and Clinical Psychology*, 76(5), 893–899. <https://doi.org/10.1037/0022-006X.76.5.893>

Neumann, C. S., Schmitt, D. S., Carter, R., Embley, I., & Hare, R. D. (2012).

Psychopathic traits in females and males across the globe. *Behavioral Sciences & the Law*, 30(5), 557–574. <https://doi.org/10.1002/bsl.2038>

Odgers, C. L., Reppucci, N. D., & Moretti, M. M. (2005). Nipping psychopathy in the bud: An examination of the convergent, predictive, and theoretical utility of the PCL-YV among adolescent girls. *Behavioral Sciences & the Law*, 23(6), 743–764. <https://doi.org/10.1002/bsl.664>

Patrick, C. J., Hicks, B. M., Nichol, P. E., & Krueger, R. F. (2007). A bifactor approach to modeling the structure of the Psychopathy Checklist-Revised. *Journal of Personality Disorders*, 21(2), 118–141.

<https://doi.org/10.1521/pedi.2007.21.2.118>

Pechorro, P., Andershed, H., Ray, J. V., Maroco, J., & Gonçalves, R. A. (2015).

Validation of the Youth Psychopathic Traits Inventory and Youth Psychopathic Traits Inventory – Short Version among incarcerated juvenile

- delinquents. *Journal of Psychopathology and Behavioral Assessment*, 37(4), 576-586. <https://doi.org/10.1177/1073191117700723>
- Pechorro, P., Silva, D., Rijo, D., Gonçalves, R., & Andershed, H. (2017). Psychometric properties and measurement invariance of the Youth Psychopathic Traits Inventory - Short Version among Portuguese youth. *Journal of Psychopathology & Behavioral Assessment*, 39(3), 486–497. <https://doi.org/10.1007/s10862-017-9597-7>
- Penson, B. N., Ruchensky, J. R., Edens, J. F., Donnellan, M. B., Vaughn, M. G., & Eisenbarth, H. (2018). Development and initial validation of an inconsistent responding scale for the Youth Psychopathic Traits Inventory. *Journal of Personality Disorders*, 32(1), 131-143. [https://doi.org/10.1521/pedi\\_2017\\_31\\_287](https://doi.org/10.1521/pedi_2017_31_287)
- Pihet, S., Suter, M., Meylan, N., & Schmid, M. (2014). Factor structure of the Youth Psychopathic Traits Inventory using the total score, three scale scores, and/or 10 subscale scores. *Criminal Justice and Behavior*, 41, 1214–1231. <https://doi.org/10.1177/0093854814540287>
- Poore, H. E., Watts, A. L., Lilienfeld, S. O., & Waldman, I. D. (2020). Construct validity of Youth Psychopathic Traits as assessed by the Antisocial Process Screening Device. *Psychological Assessment*, 32(6), 527-540. <https://doi.org/10.1177/0093854805282518>
- Poythress, N., Dembo, R., Wareham, J., & Greenbaum, P. E. (2006). Construct validity of the Youth Psychopathic Traits Inventory (YPI) and the Antisocial Process

- Screening Device (APSD) with justice-involved adolescents. *Criminal Justice and Behavior*, *33*(1), 26-55. <https://doi.org/10.1177/0093854805282518>
- Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71–90. <https://doi.org/10.1016/j.dr.2016.06.004>
- Raine, A., & Glenn, A. L. (2014). *Psychopathy: An introduction to biological findings and their implications*. New York Press.
- Ren, F., Zhang, Q., Li, M., Luo, J., Deng, J., Zhang, X., & Wang, M.-C. (2019). Factor structure and measurement invariance of Youth Psychopathic Traits Inventory-Child Version in Chinese children. *Frontiers in Psychology*, *10*. <https://doi.org/10.3389/fpsyg.2019.02550>
- Rutherford, M. J., Alterman, A. I., Cacciola, J. S., & McKay, J. R. (1998). Gender differences in the relationship of antisocial personality disorder criteria to Psychopathy Checklist—Revised scores. *Journal of Personality Disorders*, *12*, 69–76. <https://doi.org/10.1521/pedi.1998.12.1.69>
- Salekin, R. T., Rogers, R., & Sewell, K. W. (1997). Construct validity of psychopathy in a female offender sample: A multitrait-multimethod evaluation. *Journal of Abnormal Psychology*, *106*(4), 576-585. <https://doi.org/10.1037/0021-843X.106.4.576>
- Salekin, R. T., Rogers, R., Ustad, K. L., & Sewell, K. W. (1998). Psychopathy and recidivism among female inmates. *Law and Human Behavior*, *22*, 109–128.
- Salekin, R. T., Trobst, K. K., & Krioukova, M. (2001). Construct validity of psychopathy in a community sample: a nomological net approach. *Journal of Personality*



*Disorders*, 15(5), 425–441. <https://doi-org.ezproxy.shsu.edu/10.1521/pedi.15.5.425.19196>

- Schubert, C. A., Mulvey, E. P., Steinberg, L., Cauffman, E., Losoya, S. H., Hecker, T., Chassin, L., & Knight, G. P. (2004). Operational lessons from the Pathways to Desistance Study. *Youth Violence and Juvenile Justice*, 2(3), 237-255. <https://doi.org/10.1177/1541204004265875>
- Seals, R. W., Sharp, C., Ha, C., & Michonski, J. D. (2012). The relationship between the Youth Psychopathic Traits Inventory and psychopathology in a U.S. community sample of male youth. *Journal of Personality Assessment*, 94(3), 232 – 243. <https://doi.org/10.1080/00223891.2011.650303>
- Sellbom, M., Lilienfeld, S. O., Fowler, K. A., & McCrary, K. L. (2018). The self-report assessment of psychopathy: Challenges, pitfalls, and promises. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 211–258). The Guilford Press.
- Sevecke, K., Pukrop, R., Kosson, D. S., & Krischer, M. K. (2009). Factor structure of the Hare Psychopathy Checklist: Youth Version in German female and male detainees and community adolescents. *Psychological Assessment*, 21(1), 45–56. <https://doi.org/10.1037/a0015032>
- Simões, M., Lopes, J., & Gonçalves, R. A. (2016). International note: Confirmatory factor analysis and psychometric properties of the Youth Psychopathic Traits Inventory in a sample of Portuguese adolescents. *Journal of Adolescence*, 47, 100–103. <https://doi-org.ezproxy.shsu.edu/10.1016/j.adolescence.2015.12.004>
- Skeem, J. L., & Cauffman, E. (2003). Views of the downward extension: comparing the Youth Version of the Psychopathy Checklist with the Youth Psychopathic traits

Inventory. *Behavioral Sciences & the Law*, 21(6), 737–770.

<https://doi.org/10.1177/1073191112460271>

Skeem, J. L., Polaschek, D. L. L., Patrick, C. J., & Lilienfeld, S. O. (2011). Psychopathic personality: Bridging the gap between scientific evidence and public policy. *Psychological Science in the Public Interest*, 12(3), 95–162.

<https://doi.org/10.1177/1529100611426706>

Skilling, T. A., Quinsey, V. L., & Craig, W. M. (2001). Evidence of a taxon underlying serious antisocial behavior in boys. *Criminal Justice and Behavior*, 28, 450–470.

<https://doi.org/10.1177/009385480102800404>

Sohn, J. S., Raine, A., & Lee, S. J. (2020). The utility of the Psychopathy Checklist-Revised (PCL-R) facet and item scores in predicting violent recidivism. *Aggressive Behavior*, 46(6), 508-515.

<https://doi.org/10.1002/ab.21922>

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Teh, W. L., Abdin, E., P V, A., Siva Kumar, F. D., Roystonn, K., Wang, P., Shafie, S., Chang, S., Jeyagurunathan, A., Vaingankar, J. A., Sum, C. F., Lee, E. S., van Dam, R. M., & Subramaniam, M. (2023). Measuring social desirability bias in a multi-ethnic cohort sample: its relationship with self-reported physical activity, dietary habits, and factor structure. *BMC Public Health*, 23(1), 415.

<https://doi.org/10.1186/s12889-023-15309-3>

Thomson, N. D., Bozgunov, K., Psederska, E., & Vassileva, J. (2019). Sex differences on the four-facet model of psychopathy predict physical, verbal, and indirect

aggression. *Aggressive Behavior*, 45(3), 265–274.

<https://doi.org/10.1002/ab.21816>

Thomson, N. D., Vassileva, J., Kiehl, K. A., Reidy, D., Aboutanos, M., McDougale, R., & DeLisi, M. (2019). Which features of psychopathy and impulsivity matter most for prison violence? New evidence among female prisoners. *International Journal of Law and Psychiatry*, 64, 26 – 33. <https://doi.org/10.1016/j.ijlp.2019.01.001>

van Baardewijk, Y., Andershed, H., Stegge, H., Nilsson, K. W., Scholte, E., & Vermeiren, R. (2010). Development and tests of short versions of the Youth Psychopathic Traits Inventory and the Youth Psychopathic Traits Inventory-Child Version. *European Journal of Psychological Assessment*, 26(2), 122-128.

<https://doi.org/10.1027/1015-5759/a000017>

Vaughn, M. G., & Howard, M. O. (2005). Self-report measures of juvenile psychopathic personality traits: A comparative review. *Journal of Emotional and Behavioral Disorders*, 13(3), 152-162. <https://doi.org/10.1177/10634266050130030301>

Veen, V. C., Stevens, G. W. J. M., Andershed, H., Raaijmakers, Q. A. W., Doreleijers, T. A. H., & Vollebergh, W. A. M. (2011). Cross-ethnic generalizability of the three-factor model of psychopathy: The Youth Psychopathic Traits Inventory in an incarcerated sample of native Dutch and Moroccan immigrant boys. *International Journal of Law and Psychiatry*, 34(2), 127–130.

<https://doi.org/10.1016/j.ijlp.2011.02.007>

Vitacco, M. J., Neumann, C. S., Caldwell, M. F., Leistico, A.-M., & Van Rybroek, G. J. (2006). Testing factor models of the Psychopathy Checklist: Youth Version and

- their association with instrumental aggression. *Journal of Personality Assessment*, 87(1), 74–83. [https://doi.org/10.1207/s15327752jpa8701\\_06](https://doi.org/10.1207/s15327752jpa8701_06)
- Wang, M.-C., Colins, O. F., Deng, Q., Andershed, H., Deng, J., & Ye, H. (2017). Psychometric properties of the original and shortened version of the Youth Psychopathic Traits Inventory among Chinese adolescents. *Journal of Psychopathology and Behavioral Assessment*, 39(4), 620–634. <https://doi.org/10.1007/s10862-017-9619-5>
- Warren, J. I., Burnette, M. L., South, S. C., Chauhan, P., Bale, R., Friend, R., & Van Patten, I. (2003). Psychopathy in women: Structural modeling and comorbidity. *International Journal of Law and Psychiatry*, 26(3), 223–242. [https://doi.org/10.1016/S0160-2527\(03\)00034-7](https://doi.org/10.1016/S0160-2527(03)00034-7)
- Wilson, D. L., Frick, P. J., & Clements, C. B. (1999). Gender, somatization, and psychopathic traits in a college sample. *Journal of Psychopathology and Behavioral Assessment*, 21, 221–235. <https://doi.org/10.1023/A:1022825415137>
- Yang, W., Zhang, X., Wang, M.-C., Zhong, C., Luo, J., & Gao, Y. (2019). Factor structure and construct validity of the Youth Psychopathic Traits Inventory and its shorten version in Chinese detained boys. *Frontiers in Psychology*, 10, 1831. <https://doi.org/10.3389/fpsyg.2019.01831>
- Zwaanswijk, W., Veen, V. C., & Vedder, P. (2017). The Youth Psychopathic Traits Inventory: A bifactor model, dimensionality, and measurement invariance. *Assessment*, 24(7), 932 – 944. <https://doi.org/10.1177/1073191116632340>

## VITA

**ASHLEY L. MALCHOW, M.A.**  
 Department of Psychology and Philosophy  
 Sam Houston State University  
 Huntsville, Texas 77341

### EDUCATION & TRAINING

---

<b>Candidate</b>	<b>Doctor of Philosophy in Clinical Psychology (Forensic Emphasis)</b> Sam Houston State University <i>Dissertation:</i> Measurement Invariance of the Youth Psychopathic Traits Inventory Among Adjudicated Youth <i>Advisors:</i> Craig Henderson, Ph.D. (August 2020 – August 2023) Amanda Venta, Ph.D. (August 2017 – August 2020)
<b>2020</b>	<b>Master of Arts in Clinical Psychology (Forensic Emphasis)</b> Sam Houston State University <i>Thesis:</i> Multi-Informant PTSD Symptom Agreement Across Development and Parent-Child Relationship Quality <i>Advisor:</i> Amanda Venta, Ph.D.
<b>2015</b>	<b>Master of Science in Counseling</b> Southern Methodist University
<b>2011</b>	<b>Bachelor of Arts in Psychology</b> University of Arizona <i>Minor:</i> Criminal Justice

### CLINICAL EXPERIENCE

---

<b>August 2022 – August 2023</b>	<b>Psychology Intern</b> FMC Fort Worth Federal Bureau of Prisons
<i>Responsibilities:</i>	<ul style="list-style-type: none"> <li>• Conducted court-ordered pre-trial forensic evaluations</li> <li>• Co-authored forensic evaluation reports for the court</li> <li>• Provided brief, evidence-based psychotherapy including components from Cognitive Behavioral Therapy (CBT) and Rational Emotive Behavioral Therapy (REBT)</li> <li>• Led group therapy targeting the needs of adults in custody (e.g., anger management, criminal thinking)</li> <li>• Conducted intake evaluations and authored intake reports</li> </ul>
<i>Population:</i>	Ethnically diverse, incarcerated adult males in federal custody

*Supervisors:* Nicole Bartholomew, Ph.D.

**August 2018 –  
June 2022**      **Assistant Forensic Evaluator**  
Psychological Services Center  
Sam Houston State University  
Huntsville, Texas

- Responsibilities:*
- Conducted court-ordered pre-trial forensic evaluations (i.e., competency to stand trial and mental state at the time of offense for adults).
  - Consulted with supervisors to formulate psycholegal opinions in accordance with state statutes.
  - Co-authored forensic evaluation reports for the court, including psycholegal opinion and treatment recommendations.
  - Conducted court-ordered juvenile evaluations to assist in placement and probation requirement decisions.

*Population:* Ethnically diverse, male and female, adults and adolescents involved in the justice system in several rural counties; evaluations conducted in jails or in outpatient clinics.

*Supervisors:* Mary Alice Conroy, Ph.D., ABPP; Darryl Johnson, Ph.D.

**August 2021 –  
June 2022**      **Psychology Intern (Pre-Doctoral Therapist and Assessor)**  
Telebehavioral Care Program  
Bryan, Texas

- Responsibilities:*
- Provided individual, evidence-based psychotherapy including components of: Dialectical Behavioral Therapy (DBT), Acceptance and Commitment Therapy (ACT), Cognitive Behavioral Therapy (CBT), Behavioral Activation, and supportive counseling via telehealth platforms (videoconferencing in Mend and telephone sessions).
  - Conducted intake evaluations and authored intake reports.
  - Collaborated with clients on treatment plans and monitored progress using self-report measures.
  - Conducted suicide risk assessments/management.
  - Participated in weekly didactics and group supervision meetings.

*Population:* Ethnically diverse adults from rural, low-income areas with a wide array of treatment goals and needs.

*Supervisor:* Isaac Saldivar, Ph.D.; Adam Saenz, Ph.D.; Courtney Nelson, Ph.D.

**July 2020 –  
June 2021**      **Psychology Intern (Pre-Doctoral Therapist and Assessor)**  
Rusk State Hospital  
Rusk, Texas

- Responsibilities:*
- Participated in multi-disciplinary treatment team meetings and treatment plan review.
  - Conducted individual psychotherapy, both traditional face-to-face and televideo psychotherapy services, with diverse adult forensic and civilly committed populations.
  - Conducted inpatient competence to stand trial evaluations and violence risk assessments.
  - Co-authored forensic evaluation reports.

*Population:* A diverse, low-income, multi-ethnic population of adults with diagnoses including schizophrenia, schizoaffective disorder, substance use history, mood and anxiety disorders, personality disorders, family stress, and legal concerns.

*Supervisor:* Sarah Rogers, Ph.D.

**July 2019 –  
July 2020**

**Psychology Intern (Pre-Doctoral Assessor)**  
Montgomery County Juvenile Probation Department  
Conroe, Texas

- Responsibilities:*
- Conducted court-ordered and probation-referred psychodiagnostic and psychoeducational evaluations.
  - Completed semi-structured interviews with minors and their legal guardians.
  - Administered, scored, and interpreted measures assessing cognitive abilities, academic achievement, psychopathology, and personality.
  - Co-authored integrated reports of clinical findings and recommendations to assist probation department and the court in placement and probation requirement decisions.

*Population:* Justice-involved children and adolescents either detained or on probation.

*Supervisor:* Darryl Johnson, Ph.D.

**August 2018 –  
July 2019**

**Practicum Student Clinician (Pre-Doctoral Therapist and Assessor)**  
Psychological Services Center  
Sam Houston State University  
Huntsville, Texas

- Responsibilities:*
- Conducted intake evaluations and authored intake reports.
  - Conducted psychotherapy with adults utilizing evidence-based interventions.
  - Developed treatment plans and monitored treatment progress and goals.
  - Conducted comprehensive psychodiagnostics and psychoeducational assessments featuring recommendations for additional services or academic accommodations.

- Administered, scored, and interpreted measures assessing cognitive abilities, academic achievement, psychopathology, and personality.
- Authored comprehensive and integrated assessment reports.
- Provided feedback to clients on results from psychodiagnostics and psychoeducational evaluations.

*Population:* A diverse, low-income, rural, multi-ethnic population of children, adolescents, and adults with diagnoses including serious mental illness, substance use history, mood and anxiety disorders, personality disorders, family, and academic stress.

*Supervisors:* Wendy Elliott, Ph.D., ABPP; Chelsea Ratcliff, Ph.D.; Jaime Anderson, Ph.D.

**July 2014 –  
January 2015**

**Counseling Intern**

Dallas Children’s Advocacy Center  
Dallas, Texas

- Responsibilities:*
- Provided individual psychotherapy services to children, adolescents, and families utilizing evidence-based trauma focused treatment interventions.
  - Formulated treatment plans and conducted review of progress towards treatment goals.
  - Conducted weekly parent consultations concerning treatment progress.
  - Co-facilitated education and support groups for parents with children affected by traumatic events.

*Population:* A diverse, low-income, multi-ethnic population of children and adolescents affected by sexual, emotional, or physical abuse, exploitation, neglect, witness to violent crimes, and/or victim of a natural disaster.

*Supervisor:* Kathy DuMond, M.Ed, LPC-S, RPT-S

**April 2014 –  
August 2014**

**Practicum Student Clinician (Therapist)**

Center for Family Counseling  
Southern Methodist University  
Dallas, Texas

- Responsibilities:*
- Conducted intake evaluations and authored intake reports.
  - Provided individual psychotherapy services to children and adults utilizing evidence-based interventions.
  - Formulated treatment plans and monitored treatment progress.

*Population:* A diverse, low-income, multi-ethnic population of children, adolescents, families, couples, and adults presenting with a range



of concerns such as depression, grief, interpersonal conflicts, trauma, and life stresses.

*Supervisor:* Misty Solt, Ph.D., LPC-S

## **PUBLICATIONS**

---

Cooper, C. M., Chin Fatt, C. R., Liu, P., Grannemann, B. D., Carmody, T., Almeida, J. R. C., Deckersbach, T., Fava, M., Kurian, B. T., **Malchow, A. L.**, McGrath, P. J., McInnis, M., Oquendo, M. A., Parsey, R. V., Bartlett, E., Weissman, M., Phillips, M. L., Lu, H., & Trivedi, M. H. (2020). Discovery and replication of cerebral blood flow differences in major depressive disorder. *Molecular Psychiatry*, *25*, 1500 – 1510. doi: 10.1038/s41380-019-0464-7

Bartlett, E. A., DeLorenzo, C., Sharma, P., Yang, J., Zhang, M., Petkova, E., Weissman, M., McGrath, P. J., Fava, M., Ogden, R. T., Kurian, B. T., **Malchow, A.**, Cooper, C. M., Trombello, J. M., McInnis, M., Adams, P., Oquendo, M. A., Pizzagalli, D. A., Trivedi, M., & Parsey, R. V. (2018). Pretreatment and early-treatment cortical thickness is associated with SSRI treatment response in major depressive disorder. *Neuropsychopharmacology*, *43*(11), 2221 - 2230. doi: 10.1038/s41386-018-0122-9

Jha, M. K., **Malchow, A. L.**, Grannemann, B. D., Rush, A. J., Trivedi, M. H. (2018). Do baseline sub-threshold hypomanic symptoms affect acute-phase antidepressant outcome in outpatients with major depressive disorder? Preliminary findings from the randomized CO-MED Trial. *Neuropsychopharmacology*, *43*(11), 2197-2203. doi: 10.1038/s41386-018-0180-z

Trombello, J., Pizzagalli, D. A., Weissman, M. M., Grannemann, B. D., Cooper, C. M., Greer, T., **Malchow, A.**, Jha, M., Carmody, T., Kurian, B. T., Webb, C., Dillon, D., McGrath, P. J., Bruder, G., Fava, M., Parsey, P. V., McInnis, M. G., Adams, P., & Trivedi, M. H. (2018). Characterizing anxiety subtypes and the relationship to behavioral phenotyping in major depression. *Journal of Psychiatric Research*, *102*, 207-215. doi.org/10.1016/j.jpsychires.2018.04.003

Delaparte, L., Yeh, F., Adams, P., **Malchow, A.**, Trivedi, M. H., Oquendo, M. A., Deckersbach, T., Ogden, T., Pizzagalli, D. A., Fava, M., Cooper, C., McInnis, M., Kurian, B. T., Weissman, M. M., McGrath, P. J., Klein, D. N., Parsey, R. V., & DeLorenzo, C. (2017). A comparison of structural connectivity in anxious depression versus non-anxious depression. *Journal of Psychiatric Research*, *89*, 38-47. doi:10.1016/j.jpsychires.2017.01.012

Perlman, G., DeLorenzo, C., Weissman, M., McGrath, P., Ogden, T., Jin, T., Adams, P., Trivedi, M. H., Kurian, B., Oquendo, M., McInnis, M., Weyandt, S., Fava, M., Cooper, C., **Malchow, A.**, & Parsey, R. (2017). Cortical thickness is not associated with current depression in a clinical treatment study. *Human Brain Mapping*, *38*(9), 4370-4385. doi:10.1002/hbm.23664

## **CONFERENCE PRESENTATIONS**

---

1. Ball Cooper, E., Abate, A., Waymire, K., Galicia, B., **Malchow, A.**, & Venta, A. (2018). *The longitudinal impact of parental hostility and exposure to violence on borderline personality features among justice-involved youth*. Paper submitted to the 2018 American Psychology-Law Society Annual Meeting, Memphis, TN.
2. Gomez, W., Brown, A. S., Fields, L. M., **Malchow, A.**, & Pinzas, L. A. (2017) *Inhibition in phonemic word production: A quantitative analysis of the Controlled Oral Word Association Test (COWAT)*. Poster presented at the 29<sup>th</sup> Annual Conference of the Association for Psychological Science, Boston, MA.
3. Trombello, J. M., Grannemann, B., **Malchow, A.**, Cooper, C., McGrath, P., Fava, M., Jha, M., Parsey, R., McInnis, M., Carmody, T., Weissman, M., Kurian, B., Adams, P., Pizzagalli, D., & Trivedi, M. (2016). *The identification of anxiety constructs among depressed outpatients: Results from the EMBARC study*. Poster presented at the ABCT 50th Annual Convention, New York, NY.
4. Foulkrod, T., Malchow, A., Ruchensky, J., Henderson, C., & Edens, J. (2022, Nov. 19). A person-centered modeling approach of psychopathy among justice-involved youth [Symposium presentation]. Association for Behavioral and Cognitive Therapies 2022 Conference, New York City, NY, United States

## RESEARCH EXPERIENCE

---

**August 2020 – Present**

**Graduate Research Assistant**

*Health Behaviors Lab*  
Sam Houston State University  
Huntsville, Texas

- Responsibilities:*
- Assist with coding and analyzing data for various projects within the lab.
  - Collaborate with other graduate students on data management.

*Supervisor:* Craig Henderson, Ph.D.

**August 2017 – August 2020**

**Graduate Research Assistant**

*Youth and Family Studies Lab*  
Sam Houston State University  
Huntsville, Texas

- Responsibilities:*
- Co-project leader for a study examining psychosocial factors affecting justice involved youth.
  - Manage a team of undergraduate research assistants in data entry and management.
  - Assist in data collection on multiple lab projects.
  - Co-author manuscripts and conference presentations.

*Supervisor:* Amanda Venta, Ph.D.

**January 2015 –  
June 2017**

**Clinical Data Specialist**

*Center for Depression Research and Clinical Care*  
University of Texas at Southwestern Medical Center  
Department of Psychiatry  
Dallas, Texas

*Responsibilities:* *Project Director (EMBARC) – Served as the primary liaison for all project related activities, including but not limited to:*

- Assist PI with communications between federal funding agencies and the UT Southwestern Institutional Review Board.
- Ensured all sites are properly trained, following study protocols, maintaining documentation according to sponsor's requirements, and managed the distribution of study medication to all sites.
- Aided Medical Monitor in the preparation and submission of all SAE reports to the DSMB board.
- Developed and prepared detailed progress reports, continuing reviews, protocol modifications, statistical research reports, and study results as required for each study protocol.
- Organized and co-lead PI, imaging, and publication conference calls; lead weekly site coordinator conference call.
- Managed multi-site budgets, secondary site contracts, and oversaw the submission of no-cost extensions and supplemental proposals to grant sponsor, NIMH.

*Research Coordinator (EMBARC)*

- Recruited, screened, and enrolled participants by documenting proper informed consent and inclusion/exclusion criteria.
- Directly interacted with human subject study participants and served as a primary contact throughout the study.
- Coordinated imaging study visits, having received extensive training on fMRI and EEG safety, procedural, data collection, and transferring.

*Back-up Research Coordinator (Rapid – LFMS)*

- Coordinated participant screening and study visits according to protocol.

- Administered study treatment, Low Frequency Magnetic Stimulation (LFMS), ensuring proper documentation and procedures were followed.

*Rater*

- Served as a rater for the following studies: EMBARC, Rapid – LFMS, Rapid – Ketamine, and esKetamine.
- Trained to administer: Structural Clinical Interview for DSM Disorders (SCID), Montgomery-Asberg Depression Rating Scale (MADRS), The Clinician Administered Dissociative States Scale (CADSS), Physician Withdrawal Checklist (PWC-20), The MGH Antidepressant Treatment Response Questionnaire (MGH-ATRQ), Modified Observer's Assessment of Alertness/Sedation Scale (MOAA/S), Brief Psychiatric Rating Scale (BPRS+), Columbia Suicide Severity Rating Scale (C-SSRS), and the Clinical Validation Inventory for Study Admission (C-VISA).

*Supervisor:* Madhukar H. Trivedi, M.D.

**January 2014 –  
January 2016**

**Research Assistant**

*Memory and Cognition Lab*  
Southern Methodist University  
Dallas, Texas

- Responsibilities:*
- Ran research participants sessions, administering the Controlled Oral Word Association Test (COWAT).
  - Aided in the design of online surveys used in lab experiments.
  - Coded and prepared large data sets for statistical analysis.

*Supervisor:* Alan Brown, Ph.D.

**August 2014 –  
January 2015**

**Research Assistant**

*Psychosocial Research and Depression Clinic*  
University of Texas at Southwestern Medical Center  
Department of Psychiatry  
Dallas, Texas

- Responsibilities:*
- Database development and management using the electronic database REDCap.
  - Manuscript preparation, involving literature reviews and editing.
  - Assisted the PI with grant development.
  - Training other lab interns in database management.

*Supervisor:* Robin Jarrett, Ph.D.

## CLINICAL SUPERVISION

---

**August 2019 –  
May 2020**      **Peer Supervisor**  
*Responsibilities:*      Doctoral Practicum I (PSY 8382)

- Co-facilitated supervision sessions of a second-year doctoral student.
- Provided feedback on intake, 120-day treatment review, and integrated psychodiagnostic reports.

*Supervisor:* Craig Henderson, Ph.D.

## TEACHING EXPERIENCE

---

**Fall 2018 –  
Spring 2019**      **Instructor of Record**  
*History of Psychology, Online Distance Learning Course*  
 Sam Houston State University

## PROFESSIONAL SERVICE

---

**January 2021**      **Student Journal Reviewer**

- Journal of Family Psychology (in conjunction with Dr. Craig Henderson)

**January 2021**      **Student Journal Reviewer**

- Administration and Policy in Mental Health and Mental Health Services Research (in conjunction with Dr. Craig Henderson)

**November 2020**      **Student Journal Reviewer**

- BMC Psychiatry (in conjunction with Dr. Craig Henderson)

**August 2019 –  
August 2020**      **Peer Mentor**  
 Clinical Psychology Doctoral Program

- Facilitated the transition into graduate school for incoming doctoral students
- Coordinated monthly meetings with mentees

## **SPECIALIZED TRAININGS & PROFESSIONAL DEVELOPMENT**

---

<b>September 2020</b>	Columbia-Suicide Severity Rating Scale Training
<b>April 2020</b>	Telepsychology Best Practices 101, Segments 1-3
<b>August 2018</b>	Haven LGBT 101 and LGBT 102 training seminars, Sam Houston State University Counseling Center
<b>May 2018</b>	Critical Thinking in Forensic Psychological Evaluation, Terry Kukor, Ph.D., ABPP
<b>May 2018</b>	Controversies in Forensic Mental Health Assessment, Terry Kukor, Ph.D., ABPP
<b>January 2018</b>	Child Attachment Interview Administration and Rater Training
<b>July 2016</b>	Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI KID)
<b>July 2016</b>	Mini-International Neuropsychiatric Interview (MINI)
<b>June 2015</b>	Structured Clinical Interview for DSM Disorders, Version 5 (SCID-5)

## **CLINICAL ASSESSMENT EXPERIENCE**

---

- Basic Assessment System for Children, Third Edition (BASC-3)
- Historical Clinical and Risk Management (HCR-20)
- Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF)
- Minnesota Multiphasic Personality Inventory-3 (MMPI-3)
- Personality Assessment Inventory (PAI)
- Structured Interview of Reported Symptoms-Second Edition (SIRS-2)
- Weschler Adult Intelligence Scale-Fourth Edition (WAIS-IV)
- Weschler Abbreviated Scale of Intelligence-Second Edition (WASI-II)
- Weschler Individual Achievement Test-Third Edition (WIAT-III)
- Weschler Intelligence Scale for Children-Fifth Edition (WISC-V)
- Wide Range Achievement Test 5 (WRAT5)
- Woodcock-Johnson Achievement (WJ-Achievement)
- Woodcock-Johnson Cognitive (WJ-Cog)
- Vineland Adaptive Behavioral Scales (Vineland-3)

## **PROFESSIONAL MEMBERSHIPS**

---

American Psychological Association

American Psychological Association of Graduate Students

Division 56 of the American Psychological Association, Trauma Psychology

Division 37 Section 1 of the American Psychological Association, Section on Child Maltreatment

American Psychology-Law Society (Division 41)  
Texas Psychological Association