

AN EXAMINATION OF PSYCHOPATHY, PROMISCUITY, AND OTHER RISKY SEXUAL  
BEHAVIOR OVER TIME

by

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## ABSTRACT

Psychopathic individuals are thought to have impersonal and sexually promiscuous relationships. Despite considerable theory on this topic (Cleckley, 1941), there is little research to support this contention. To fill this gap in research, the current study sought to examine the relation between psychopathy, promiscuity, and other risky sexual behavior. One hundred fifty-two delinquent youth between the ages of 11 and 18, were recruited for the study following contact with the juvenile justice system. Youth participated in four evaluations over two years to assess whether psychopathic traits predicted engagement in promiscuous sexual behavior and other risky sex practices. In addition, this study examined whether youth with psychopathic characteristics experience negative outcomes as a result of their sexual behavior. Findings indicated that psychopathic traits did not predict promiscuous sexual behavior, casual sex, or unprotected sex. Psychopathic traits (CU traits) however, were negatively associated with negative sex outcomes (e.g., pregnancy, STD infection), indicating that youth high in these traits experienced fewer negative outcomes. Demographic characteristics gender and age were significant predictors of risky sexual behavior at the 2-year follow-up including engagement in casual sex and promiscuous sex. Based on Moffitt's (1993) model of youth antisocial behavior trajectories, growth mixture modeling techniques were employed based on age of onset and past promiscuous sexual behavior to identify patterns of promiscuity over time. However, age of sexual debut did not discriminate different patterns of promiscuous sexual behavior in the present study. Overall, the results indicate that psychopathy was not a predictor of engagement in promiscuity and other risky sexual behaviors. Implications of the findings are discussed.

## DEDICATION

“What we obtain too cheap, we esteem too lightly: it is dearness only that gives everything its value.”

If Thomas Paine is to be believed, then this degree is valuable beyond compare. It took enormous effort and sacrifice to get to this point, and I did not do it alone. I dedicate this dissertation to everyone I missed while I was in Alabama. This is what I have been working on for the past six years.

## LIST OF ABBREVIATIONS AND SYMBOLS

ADHD	Attention-Deficit/Hyperactivity Disorder
AIC	Akaike Information Criteria
ANOVA	Analysis of Variance
BIC	Bayesian Information Criteria
CD	Conduct Disorder
CU	Callous/Unemotional
<i>df</i>	Degrees of freedom
<i>F</i>	Fisher's F ration: A ratio of two variances
<i>f</i>	Cohen's effect size index
ICC	Intraclass correlation coefficient: between-persons variance divided by total variance (sum of between- and within- persons variance)
IRB	Institutional Review Board
LMR	Low-Mendall-Rubin Adjusted Likelihood Ratio Test
<i>M</i>	Mean: sum of a set of measurements divided by the number of measurements in the set
<i>n</i>	Number of items, subjects, or values
ODD	Oppositional Defiant Disorder
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value as extreme or more extreme than the observed value
PCL	Psychopathy Checklist
PCL:YV	Psychopathy Checklist: Youth Version
PCL-R	Psychopathy Checklist-Revised
<i>r</i>	Pearson product-moment correlation
$R^2$	Coefficient of Determination

<i>SD</i>	Standard Deviation
$\beta$	Beta coefficient
$\chi^2$	Chi-square statistical test
<	Less than
=	Equal to
>	Greater than

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## CONTENTS

ABSTRACT .....	ii
DEDICATION .....	iii
LIST OF ABBREVIATIONS AND SYMBOLS .....	iv
ACKNOWLEDGEMENTS .....	vi
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
INTRODUCTION .....	1
METHOD .....	26
RESULTS .....	35
DISCUSSION .....	53
REFERENCES .....	71
APPENDICES .....	77

## LIST OF TABLES

1. Descriptive Statistics.....	45
2. Intercorrelations Between Psychopathy, Sexual Behavior, and Demographics.....	46
3. Multilevel Model Parameters; Predicting Promiscuity with Psychopathy Factor Scores and Demographic Variables.....	47
4. Bivariate and Partial Correlations of Baseline Predictors with Promiscuity Score at 2-year Assessment.....	48
5. Bivariate and Partial Correlations of Baseline Predictors with Negative Sex-Related Outcomes Score.....	49

## LIST OF FIGURES

1. Gender invariance in engagement in non-committed sex.....	50
2. Gender invariance in promiscuity.....	51
3. Relation between unprotected sex and sex-related negative outcomes .....	52

## INTRODUCTION

Psychopathy is a severe personality disorder that causes considerable devastation to individuals with the syndrome. For instance, individuals with psychopathic traits often suffer from learning deficits, poor performance in school, substance abuse, contact with the law, and superficial interpersonal relationships (Harris, Skilling, & Rice, 2001; Newman, 1998; Salekin, Rogers, & Machin, 2001). Moreover, the psychopathic condition imparts a toll on society with psychopathic individuals engaging in aggression and violence in communities as well as generating increased expenses due to high rates of incarceration, substance use treatment, and reliance on welfare (Hare, 2003; Salekin et al., 2001; Salekin, Rosenbaum, & Lee, 2008). Psychopathy, like many other psychological disorders, can be thought to exist as a continuum, although in its most prototypical form contains several hallmark symptoms related to interpersonal deceit, deficient affective experience, and impulsivity.

Although the definition of psychopathy continues to evolve, current definitions include a constellation of interpersonal, affective, lifestyle, and antisocial traits and behavior. Within the interpersonal realm, psychopathic individuals are superficially charming, grandiose, manipulative and deceptive. Psychopathic individuals exhibit shallow affect and in some cases meanness and show major deficits in empathy and remorse. With respect to lifestyle features, psychopathic individuals are believed to be sensation seekers, to be unreliable and to be poor at planning, including planning meaningful futures with reliable employment and stable marital relationships. Although the interpersonal and affective deficits of people with psychopathic traits have been well documented, there is significant debate about whether antisocial behaviors should

be included as defining features of the construct. Some researchers argue that antisocial conduct is a behavioral consequence of the affective and interpersonal deficits of disorder, but depending on the type of psychopathic individual this behavioral outcome may not always be present. Similarly, one such behavioral feature that is particularly contentious, and the focus of the current study, is promiscuous sexual behavior and whether this feature is part of the syndrome, a behavioral consequence, or simply unrelated to the condition.

According to Hervé Cleckley (1942/1976), people with psychopathic traits engage in promiscuous sexual behavior, casual sex, poorly motivated sexual behavior, and have low regard for their sexual partners. Cleckley's contention about the sexual behavior of psychopathic individuals is well documented in his seminal monograph *The Mask of Sanity*. Specifically, of the 15 cases described by Cleckley, 13 had explicit sexual promiscuity as a part of their case description. For instance, in describing the case of a man who was identified as possessing psychopathic traits Cleckley (1942/1976) wrote, "His relations with women have always been casual. He had frequent sexual experiences but failed to develop any lasting attachment" (p. 122). Although the individuals described by Cleckley entered into relationships, even marriages, there was frequent infidelity. In the case of one married male with psychopathic traits, Cleckley (1942/1976) wrote, "He admits that he made no attempt to suppress his natural inclinations and says that he enjoyed sexual intercourse frequently... He availed himself of every opportunity to have casual intercourse with other women" (p. 152-153). Hare (1993) echoed these contentions in his book *Without Conscience*. He describes the same casual approach the psychopath takes to relationships, with frequent and blatant infidelity. He writes about one man who returns to his girlfriend after eight months in prison, "He went directly to Elyse's house and dazzled her anew,

but her roommates were not impressed. He propositioned one roommate and crawled into bed with the other while she slept” (p. 72).

Problems forging meaningful relationships with others seems to be linked, in part, to all the facets of psychopathy (interpersonal, affective, and lifestyle). Each of these dimensions may contribute to our understanding about why psychopathic individuals are able to engage in antisocial acts without regard for others, thus highlighting how very central it may have been as an indicator of psychopathy. Given the early case descriptions of psychopathy and the notion that deceptive and impulsive individuals would be more inclined to have impersonal relationships, it is perhaps of little surprise that both Cleckley (1941) and Hare (1991) etched into their definitions items that would directly tap impersonal sexual practices such as sexual promiscuity, numerous failed marital relationships and so forth when theorizing and conceptualizing key symptoms of the disorder.

Even as the understanding of the psychopathy construct has evolved, there has been little focus on the relationship patterns and sexual behaviors of individuals with psychopathic traits. Despite this paucity of empirical support, there continues to be “impersonal sex” items on the most popular psychopathy indices. For instance, self-report measures, such as the Levenson Self-Report Psychopathy scale contains the item such as “love is overrated” and The Hare Self Report Psychopathy scale (Hare, SRP, 1991) contains the item “I prefer having many sexual partners rather than just one.” The PCL-R, which is considered to be the gold standard for the measurement of psychopathy contains the items “promiscuous sexual behavior” and “many short-term marital relationships.” Despite 1) the inclusion of impersonal sex items on indices of psychopathy, 2) case study examples supporting the impersonal sexual behavior of psychopaths, and 3) theory to suggest the connection of abnormal sexual behavior to psychopathy, research

focused on this area has lagged behind other aspects of psychopathy. The absence of research in this area has limited what we know about the relation between psychopathy, promiscuity, and romantic relationships and how these features contribute to our understanding of the construct of psychopathy.

Because of the limited research on this topic, a primary aim of the current study was to further investigate the relationship between psychopathy and sexual behavior. Several chief areas of theory and research are reviewed in the following sections to give the reader a better idea of the available information pertaining to the relation between psychopathy and sexual promiscuity. In each section, I will first cover the research on the topic of interest, and then also suggest limitations in this research and the need for further study. First, factor analytic research is reviewed. This research is overviewed because theoreticians and researchers have suggested that sexual promiscuity is a defining feature of psychopathy. Much like the debate on whether antisocial behavior is a *part* of psychopathy, a debate could be constructed as to whether sexual behavior should be considered a component of the construct or a consequence of the interpersonal, affective and lifestyle features of psychopathy. Reviewing the factor analytic research will help the reader to understand whether sexual promiscuity loads onto a specific psychopathy factor or whether it is more likely to be a related feature of psychopathy. Second, I discuss gender differences and whether sexual promiscuity should be expected to differ across gender. Third, I will discuss the literature on adolescent psychopathy and argue why examining sexual promiscuity at this age may be important. Fourth, the literature on human sexual behavior will be reviewed to set the framework for understanding whether the sexual practices of individuals with psychopathic traits is aberrant and diverges from the typical. Finally, Moffitt's theoretical model on the development of antisocial behavior will be reviewed for the purposes of

extending this model to examine the development of promiscuous sexual behavior in adolescents with psychopathic features.

### **The Structure of Psychopathy: Factor Analytic Research**

Factor analytic research can be helpful in understanding the structure of psychopathy and provides information regarding whether sexual promiscuity loads onto any of the psychopathy factors. If sexual promiscuity or other impersonal sexual items load onto a specific psychopathy factor, then this would give further confidence that such items represent a defining feature of the disorder. Moreover, if there are multiple factors underpinning psychopathy, then knowing which factor the various sexual items load onto could be informative at a descriptive and etiological level. This information can be helpful in the identification of psychopathy subtypes, examining normal variations in the degree to which an individual has a certain set of symptoms, as well as aid in the prediction of negative outcomes. In the following paragraphs, some of the early factor analytic studies are overviewed. As well, several contemporary factor analytic investigations are examined in order to further shed light on this topic.

Early factor analytic work on the PCL/PCL-R revealed that psychopathy was comprised of two factors (e.g., Harpur, Hare, & Hakstian, 1989). Factor 1 ( $F_1$ ) was made up of the interpersonal and affective features, and many researchers consider this factor to encapsulate the hallmark characteristics of the syndrome including such symptoms as superficial charm, callous lack of empathy, and shallow affect. Factor 2 ( $F_2$ ) was comprised of impulsivity and social deviance including antisocial and criminal behaviors, poor behavioral control, and a parasitic lifestyle (Harpur, Hakstian, & Hare, 1988; Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990; Harpur et al., 1989; Hare, 1991). This traditional two-factor model has been a dominant model for understanding psychopathy and has been tested and replicated. Although this model is

well accepted, some differences in factor structure have been found between races (Cooke, Kosson, & Michie, 2001), gender (Salekin, Rogers, & Sewell, 1997), and European and North American samples (Cooke & Michie, 1999). Despite these differences, the traditional two factor model is generally robust and widely accepted.

The exploratory factor analytic research mentioned above has failed to support the inclusion of promiscuous sexual behavior as a meaningful component of psychopathy. Specifically, in all of the early factor analytic studies (Harpur et al., 1988; Hare et al., 1990; Harpur et al., 1989; Hare, 1991), sexual promiscuity was not found to load on any of the factors. PCL item “Many short-term unsuccessful relationships” has also failed to load on either factor in these important early factor analytic studies. Interestingly, in these seminal studies of psychopathy factor structure, only three items failed to load on either factor, and two of the three items are those assessing impersonal sexual behavior. Nevertheless, both sexual items have been maintained as items on measures of psychopathy with two of the twenty PCL-R items, tapping features of promiscuous sexual behavior and relationship difficulties.

Following the Exploratory Factor Analytic studies demonstrating the fit for a two-factor model of psychopathy, a set of confirmatory factor analytic studies was conducted with the intent of further understanding and potentially refining the factor structure of psychopathy. First, Cooke and Michie (2001) developed a hierarchical three-factor model of psychopathy. This three-factor model differed from the two-factor model in a few important ways. First,  $F_1$  was split into two separate-yet-related factors labeled Arrogant and Deceitful Interpersonal Style and Deficient Affective Experience, respectively. Factor three, Impulsive and Irresponsible Lifestyle, is similar to  $F_2$  of Harpur, Hare, and Hakstian’s model (1989) except that explicitly criminal items (e.g., Criminal Versatility, Violation of Conditional Release) were removed from the factor. Cooke

and Michie (2001) have suggested that overt criminality may be a feature of the all-male offender sample used in the development of the PCL, but that chronic antisocial behavior is not descriptive of psychopathy more generally. This model asserts that antisocial behavior is not a core feature of psychopathy, but a consequence of affective and interpersonal deficits central to the psychopathic personality. Sexual promiscuity was also not included in the model. This may be because it was not an item that contributed to good model fit or because the authors believed that, like other antisocial behavior, promiscuity is a consequence of the psychopathic personality style, although they never explicitly stated whether they allowed this item to load in their factor analytic study.

Following the development of the three-factor model, a four-factor model was proposed and tested by Hare (2003). This model maintained the three factors proposed by Cooke and Michie (2001) and reincorporated the excluded items assessing antisocial behavior into a fourth factor (Hare, 2003). Interestingly, in this factor analytic study, sexual promiscuity was also not included in the model (Cooke, Michie, & Hart, 2006; Hare & Neumann, 2006). Again, it is not clear if, a priori, and based on the traditional two factor models, sexual promiscuity was tested as an explicit item on any of the factor structure models. If it can be assumed it was allowed to load (tested), then it does not appear to cohere with the rest of the psychopathy items, but again, it is not clear from the study whether this was formally tested.

In an interesting study, Harris, Rice, Hilton, Lalumière, and Quinsey (2007) examined the factor structure of psychopathy using the PCL-R and additional items assessing other aspects of sexual behavior. Harris et al. (2007) proposed that items related to precocious and coercive sexual behavior are more useful in the identification of individuals with psychopathic traits than the traditional PCL-R items assessing promiscuity and relationship problems. According to their

study conducted with a sample of incarcerated sex offenders, they proposed a three-factor model, the original two Hare factors and a third factor titled “Coercive and Precocious Sexuality.” Based on their innovative study, Harris et al. (2007) found that a third factor, which incorporated items related to sexual behavior (i.e., age of sexual debut, sex with an adult (as a minor), forced sex) was a good fit for their data. Although research on this topic is very limited, the idea that individuals with psychopathic traits would have an earlier age of sexual debut is somewhat theoretically grounded. Researchers have demonstrated correlations between psychopathy and antisocial behavior (Marsee, Silverthorn, & Frick, 2005), and antisocial behavior and early age at first sexual experience (Capaldi, Crosby, & Stoolmiller, 1996). Taken together, it makes sense to predict that people with psychopathic traits would be more likely to engage in sex at a younger age than their peers. The case for coercion being part of the psychopathy construct is less grounded in the literature. Harris et al. used a sample of sex offenders in their research and higher rates of coercive techniques are expected in such a sample. Nonetheless, this study provides incremental support for aberrant sexual practices being a part of the psychopathy construct.

As discussed above, factor analytic research to date has shown that promiscuous sexual behavior may not load particularly well onto either two-, three-, or four-factor models of psychopathy. Despite findings to suggest that sexual promiscuity may not load on a specific factor of psychopathy, Cleckley’s case studies and other descriptive accounts of psychopathic individuals suggest that promiscuity is relevant to the construct. It is also interesting to note that despite the PCL item sexual promiscuity not loading on either  $F_1$  or  $F_2$ , Hare (2003) has not removed this item from the checklist, thereby indicating that it is important to consider and rate in psychopathy assessments. This still leaves open the question of whether sexual promiscuity is

part of the construct or a consequence of the syndrome. Further testing via factor analytic research and studies such as the current one will be crucial in conclusively elucidating the relationship between psychopathy and sexual behavior. Next covered is the topic of sexual promiscuity and gender differences as it pertains to psychopathy.

### **Psychopathy, Gender and Promiscuity**

Psychopathy may manifest differently across gender. This has been suggested to be the case in terms of prevalence rates, but also in terms of different psychopathy symptoms being the most prominent in males and females. The modern conceptualization of psychopathy may be less relevant to girls and measures of psychopathy less sensitive to identifying females with psychopathic traits. Females tend to score much higher on the personality components of psychopathy than they do on the antisocial behavior components (Schrum & Salekin, 2006). Psychopathy prevalence rates drop for females when the antisocial behaviors are weighted equally in the diagnosis (Salekin et al. 2001). It is plausible that if psychopathy diagnoses were based primarily on personality traits, males and females would show more similar prevalence rates of the disorder. In fact, without endorsing the antisocial and criminal behavior items on the PCL-R, an individual is unlikely to meet the threshold for a diagnosis of psychopathy (Skeem & Cooke, 2010). Promiscuous sex, although clearly a behavior, was found to load with the affective traits of psychopathy in a recent exploratory factor analysis in an adolescent sample using the Antisocial Process Screening Device (Rosenbaum, 2010). This unexpected factor loading suggests that items assessing sexual behavior may be measuring a behavior but tapping an underlying personality trait. For example, people might engage in sexual behavior with many different partners because they have difficulty forging a meaningful connection with one. In his book *Without Conscience* (2003), Hare writes, "... a frightening and perplexing theme runs

through the case histories of all psychopaths: a deeply disturbing inability to care about the pain and suffering experienced by others – in short, a complete lack of empathy, the prerequisite for love” (p. 6).

There is little debate that psychopathy as it is currently measured is less prevalent in females (Harris et al., 2001). One major difference is that females generally engage in less antisocial behavior and have lower PCL F<sub>2</sub> scores (Harris et al., 2001; Schrum & Salekin, 2006; Silverthorn & Frick, 1999). Research also suggests that psychopathic women use different tactics to achieve the same goals as their male counterparts, such as using relational rather than physical aggression (Crick & Grotpeter, 1995; Miller & Lynam, 2003). Psychopathic women are more likely than men to have relationship difficulties and tell lies yet less likely to engage in unlawful behavior (Salekin et al. 1998). Engagement in promiscuous sexual behavior has also been purported to be a useful item for discriminating psychopathy in women. In a matched-pair study of male and female offenders “promiscuous sexual behavior” was the single most important item for discriminating females with psychopathic traits (Grann, 2000). ‘Promiscuous sexual behavior’ seems to be a rare PCL item that has shown promise in discriminating between females with psychopathic traits from females without such traits. Perhaps, if more females had been included in early factor analytic research, ‘promiscuous sexual behavior’ would have shown stronger factor loadings.

There is evidence that psychopathy exists in women although it may not be identical to the construct evidenced in men. Promiscuity may be particularly descriptive of female psychopathy, although there is relatively little research in this area so the gender invariance of this symptom remains unclear. There may be a number of factors that contribute to differences including true gender differences in the rates of promiscuous sexual behavior, differences in the

way raters perceive and classify the sexual behaviors of males and females, and so forth. For example, research has consistently demonstrated that women are viewed more negatively than males for engaging in similar rates of sexual behavior (Clayton & Trafimow, 2007). Research specifically examining the relationship between psychopathy and promiscuity is necessary to more conclusively determine the relation between promiscuous sexual behavior and psychopathy. Additional research is needed to gather basic statistics on the rates at which individuals with psychopathic traits engage in sexual behavior, examine gender invariance in promiscuous sexual behavior, and the potential negative outcomes from engaging in such behavior. While the relationship between psychopathy and promiscuous sexual behavior is tenuous in adults there has been virtually no research focusing on the sexual behavior of juveniles with psychopathic traits. The next section turns to the important topic of psychopathy in youthful populations.

### **Psychopathy in Juveniles**

Although the bulk of psychopathy research has been conducted with adult samples, evidence that adults with psychopathic traits displayed significant antisocial traits in childhood has spurred the search for the “fledgling psychopath” (Lynam, 1996). During the 1990s, many researchers developed instruments purported to identify “tomorrow’s psychopaths.” A downward extension of the PCL-R was created for this purpose, the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003). Other scales created during this time included the Psychopathy Screening Device (PSD; Frick & Hare, 1994), now referred to the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), and the Childhood Psychopathy Scale (CPS; Lynam, 1997). A major problem with all these measures is that they were derived directly

from adult measures with little research to indicate that psychopathy in children will be structured similarly to psychopathy in adults (Salekin et al., 2001).

The APSD was originally developed to study early onset behavior problems thought to be a precursor to psychopathy via parent and teacher report (Silverthorn, Frick, & Reynolds, 2001; Benning, Patrick, Salekin, & Leistico, 2005). Later, a self-report version of the APSD was created for adolescents (Frick & Hare, 2001). Early factor analytic work with parent and teacher APSD ratings of clinic-referred samples revealed two distinct but related factors that closely resembled the two-factor model initially proposed by Hare (Frick, O'Brien, Wootton, & McBurnett, 1994). The Callous-Unemotional (CU) traits factor of the APSD included items such as "is unconcerned about the feelings of others" and "feels bad or guilty when he or she does something wrong." The CU factor is similar to PCL F<sub>1</sub> that encompasses the affective and interpersonal traits associated with psychopathy. The second factor of the APSD, Impulsive/Conduct Problems (I/CP) included items such as "thinks he or she is more important than others" and "acts without thinking." This factor includes many of the antisocial behavioral features reflected in F<sub>2</sub> of the PCL (Frick et al., 1994).

A three-factor structure emerged in a community study of referred and non-referred juveniles using parent and teacher APSD ratings (Frick, Bodin, & Barry, 2000). In this three-factor model, the CU factor remained relatively intact, and Impulsivity and Narcissism Factors were distilled incorporating the remaining items. In a sample of juvenile offender samples, the three-factor solution was a much better fit for the data than the two-factor model, and no differences between gender or ethnicity were detected (Vitacco, Rogers, & Neumann, 2003). The relationship between psychopathy and promiscuity in juveniles has mirrored adult findings. Just like in adult samples, promiscuous sexual behavior, labeled impersonal sexual behavior on the

PCL:YV, failed to load on any factor (Salekin, Brannen, Zalot, Leistico, & Neumann, 2006; Neumann, Kosson, Forth, & Hare, 2006). An important finding from these factor analytic studies is the association of the APSD factors with other brands of disruptive behavior disorders in children. The Narcissism factor was correlated with criteria for Oppositional Defiant Disorder and the Impulsivity factor was highly correlated with Attention Deficit/Hyperactivity Disorder. Consistent with research in adult samples, items assessing callous and unemotional traits were not strongly associated with any DSM criteria (Frick et al., 2000). This finding suggests that items tapping callous and unemotional features may be the most useful at discriminating psychopathy from other syndromes that share antisocial and impulsive behavioral criteria.

While juveniles with psychopathic traits seem to resemble adults on personality, cognitive, and affective measures (Salekin et al., 2008), their developmental status may make these determinations fluid. Of specific concern is that some traits of psychopathy (e.g., egocentricity) mimic transient stages of typical adolescent development (Seagrave & Grisso, 2002), creating the potential problem of identifying many more children than will actually become psychopathic as adults. The ability to detect psychopathy in youth would be highly valuable in our society from a legal perspective (Hare, 1991; Forth, Hart, & Hare, 1990; Lynam, 2002), but it also poses a threat of stigmatizing youth who may be displaying psychopathic traits as part of the normal developmental course (Seagrave & Grisso, 2002). Despite concerns, research on psychopathic traits in children has increased over the past two decades.

These studies have provided empirical support for the existence of psychopathy in child and adolescent samples. Not surprisingly given the scarce research on the relation between psychopathy and promiscuity in adults, research focusing on the sexual behavior of juveniles with psychopathic traits is extremely limited. In addition, we know very little about whether

there exists variance or invariance across gender, with boys or girls possibly differing in engagement in promiscuous sex and relationship problems. Maintaining a developmental perspective is particularly important for examining sexual behavior and psychopathy in juveniles as they are forging their sexual identities at the same time as their personality features are stabilizing. The following section will review the literature on sex including definitions and included behaviors with a specific focus on sexual behaviors in juveniles and adolescents.

### **Human Sexual Behavior**

This section aims to prepare the reader for a study on the sexual behavior of juveniles with psychopathic traits by first examining typical sexual behavior. A foundational understanding of normative sexual behavior is of paramount importance for making determinations regarding the normalcy or deviation of the sexual behavior reported in the current study sample, and possibly psychopathic individuals more generally. To this end, the following paragraphs will provide a definition of sex, examine typical sexual behavior, discuss promiscuous sexual behavior including information on rates of engagement in sex with different partners and gender differences, other risky sexual behaviors (besides promiscuity), and also review several theories that attempt to account for promiscuous sexual behavior. Relevant to the current research study, each topic will attempt to include information about the sexual behavior of juveniles.

***Defining Sex.*** Defining sex is deceptively easy. While sex is a commonly used term, there is much variability in how it is defined, and which behaviors are being referred to when one uses the term. Research has indicated that while greater than 97% of undergraduate survey respondents considered penile-vaginal intercourse to constitute sex, other sexual acts were also incorporated in students' definitions (Pitts & Rahman, 2001; Richters & Song, 1999; Sanders &

Reinisch, 1999). For example, between 70%-90% of respondents in these studies categorized penile-anal intercourse as sex, and between 32%-58% of respondents considered oral-genital contact in their definition of sex. In a more recent study conducted with heterosexual Canadian undergraduate students, less than 25% of students considered oral-genital contact to be sex and even fewer (2%-14%) considered masturbatory behaviors in person, over the phone, or on the computer as constituting sex with that person (Randall & Byers, 2003). In the current study, participants were asked if they were sexually active and how many different sexual partners they had. While specific behaviors were not reported, the research cited above would suggest that greater than 90% of them would be referring to penile-vaginal intercourse and at least 75% would be referring to anal intercourse.

***Quantity of Sexual Partners.*** The research cited above focused on what behaviors are typically included in young adults' definitions of sex. This section will focus on quantity of sexual partners, and how many different partners are considered promiscuous. "No other single feature of one's sex life more succinctly reflects the broad social dimension of sexual behavior; it reflects the breadth of sexual experience and provides some indication about the nature of the person's social relationships" (Laumann, Gagnon, Michael, & Michaels, 2000, p. 172). Although promiscuity is ill-defined, a person with a particularly high number of sexual partners may be labeled promiscuous. The Merriam-Webster Dictionary defines promiscuous as "Having casual sexual relations frequently with different partners; indiscriminate in the choice of sexual partners. Lacking standards of selection..." (2011). This definition implies a negative value judgment of individuals who choose to have multiple sex partners. It is also subjective and vague as the meaning of "frequently" will vary across individuals. There is likely to be great variability

in how many different partners, and how frequently one would have to change partners, to be considered promiscuous.

Unfortunately, promiscuous sexual behavior has not been quantified, and there is no set number of sexual partners required to be considered promiscuous. Because promiscuity refers to having an abnormally high number of sexual partners, an important first step is determining how many partners the average person has. Laumann et al. (2000) reported that in 1999, 10.8% of participants aged 18-24 years old had zero sex partners, 57% had one sex partner, 23.7% had two to four sex partners, and 8.6% had five or more sex partners. Normatively, 68% of 18-24 year olds had one or fewer sexual partners while fewer than 10% had five or more sexual partners.

A count of the number of sex partners is a core feature of promiscuity, however it is also a limited measure in that there are other important considerations. For example, there are radically different social implications for an individual who has three sex partners sequentially versus an individual who has three sex partners concurrently.

***Age of Onset.*** Another important factor to consider, especially when examining sexual behavior in juvenile samples, is age of onset. In Western cultures including the United States, approximately 70% of adolescents report having engaged in sexual intercourse by the time they were 18 years old (Zimmer-Gembeck & Helfand, 2007). Based on 35 longitudinal studies of adolescent sexual behavior, Zimmer-Gembeck and Helfand determined that sexual debut for individuals in the United States typically occurred between the ages of 16 and 18. Sexual debut that occurred prior to age 15 was considered early onset and sexual debut after age 18 was considered late onset (2007). As discussed earlier, precocious onset of sexual behavior has been studied as a meaningful marker of psychopathy in adults (Harris et al. 2007). Sexual debut appears to be negatively related to antisocial behavior in adolescents. For example, early sexual

debut has been associated with increased alcohol use and aggression in males, and substance use and depression in females (Zimmer-Gembeck & Helfand, 2007). Adolescents who first had sex at a more typical age, between ages 16 and 18, engaged in less risky sexual behavior including having fewer partners and using condoms and other forms of contraception more routinely (Zimmer-Gembeck & Helfand, 2007).

***Gender Differences in Sexual Behavior.*** As discussed in the section on gender and psychopathy, there is mounting evidence of gender differences in the rate and expression of psychopathy. The research has shown some important gender differences in the psychopathy construct, with some evidence that promiscuity may be particularly descriptive of female psychopathy. Although limited, studies with juvenile samples have found a similar pattern suggesting that promiscuity may be more relevant for girls with psychopathic traits than boys. In a study of adolescent female offenders, “impersonal sexual behavior” and “unstable interpersonal relationships” were found to be good items for discriminating girls with psychopathic traits from girls without these traits (Schrum & Salekin, 2006). These same items did not discriminate psychopathic adult males from males with fewer psychopathic traits (Hare, 2003). In a recent study with a sample of male and female juvenile delinquents, psychopathy was found to be marginally predictive of promiscuous sexual behavior (Rosenbaum, 2010). This study showed a significant gender by promiscuity interaction indicating that psychopathic females reported engaging in sexual intercourse with more partners than females with lower levels of psychopathic traits, while for males, psychopathy and promiscuity were not related.

Gender invariance in the relation of psychopathy and promiscuity may be best understood in the context of gender roles and impact of gender stereotypes on sexual behavior. In social psychology there is research showing that both males and females endorse a Social Norm

Hypothesis; across gender, female promiscuous behaviors are viewed as deviant which results in negative attributions towards promiscuous women (Clayton & Trafimow, 2007). These same negative attributions are not associated with males who engage in promiscuous sexual behavior. So, when a woman engages in promiscuous sexual behavior she is violating strongly held societal normative expectations. It has been suggested that a higher level of psychopathic characteristics are required for girls to violate societal norms (Penney & Moretti, 2007; Verona & Vitale, 2006). The difference may be a callous or uncaring personality type; hallmark traits of psychopathic personalities. Research has demonstrated significant correlations between promiscuity and the Callous-Unemotional (CU) factor in females only (Rosenbaum, 2010). Because engagement in promiscuous sexual behavior is not in violation of normative behavior for men, promiscuity may not be as salient a predictor of psychopathy for males.

***Motivation for Sex.*** Although people have sex for many different reasons, implicit in their behavior is that they have not found, or have not desired to find, one person to commit to. This could be especially relevant when discussing promiscuity in the context of psychopathy. When defining the construct, Cleckley stated that individuals with psychopathic traits have “pathological egocentricity and incapacity for love” (Cleckley, 1942/1976). It makes sense that individuals with these personality traits might fail to form bonds with their sexual partners, have short-term intimate relationships, and engage in sexual activity with multiple partners. Individuals with psychopathic traits may engage in promiscuous sexual behavior because they struggle to form strong emotional connections with any one of their partners. Although information about promiscuous sexual behavior is important for understanding the sex life of an individual, variability in how it is operationalized makes measurement difficult.

***Risky Sexual Behavior.*** Risky sexual behavior is defined as any sexual act that puts someone at increased risk for acquiring sexually transmitted diseases or becoming pregnant and includes early sexual contact, promiscuity, prostitution, and unsafe sex practices (Boyer, Shafer, Wibbelsman, Seeberg, Teitle, & Lovell, 2000; Tapert, Aarons, Sedlar, & Brown, 2001; Rucevic, 2010). Risky sexual behavior is a broader category that subsumes promiscuous sexual behavior. However, only promiscuity has been theorized to be part of the psychopathy construct and been included on measures of psychopathy. As described previously, recent research has emerged suggesting a link between psychopathy and early sexual contact and psychopathy and coercive sexual behavior (Harris et al., 2007). Promiscuous sexual behavior may be too specific to fully capture the sexually deviant behavior of psychopaths.

The bulk of research examining the causes of risky sexual behavior has focused on attitude and peer influence variables. Increased support for the Five Factor Model of personality (FFM), however, has led to a proliferation of research using general models of personality to explain a wide range of phenomena including psychopathy and risky sexual behavior (Costa & McCrae, 1992). Research on the personality profile of individuals who engage in risky sexual behavior is remarkably similar to the profile of psychopathic individuals: low agreeableness, low conscientiousness, high extraversion, and combination of low and high neuroticism (low anxiety and self-consciousness; high aggression and impulsivity) (Miller & Lynam, 2003). Disorders with common underpinnings should demonstrate a similar FFM profile; a finding that lends support for the inclusion of risky sexual behavior as a feature of psychopathy. Perhaps by expanding the sexual features of psychopathy beyond promiscuity, there would be a stronger association of sex and psychopathy.

To summarize, while promiscuity has always been a component of both the psychopathy construct and included in psychopathy measures, there is less empirical support for its inclusion than might be expected. However, this lack of support may be attributable to the fact that most of the research has been conducted with male populations. There is evidence that promiscuity may be more characteristic of female psychopaths. It is also true that much of the research has been conducted with adult samples, so little is known about the role of promiscuity in juvenile populations. Young adulthood, however, is a time of sexual experimentation and promiscuity may be more a normal stage in the sexual development process, than a marker for psychopathic behavior. It is important to know, therefore, whether promiscuity in juveniles does, in fact, map on to psychopathy and, further, whether this is a transient phase or longer lasting. I will now look at the pathways to antisocial behavior and how these same routes may be applied to better understanding the development of adolescent promiscuous sexual behavior.

### **Pathway Model of Sexual Debut and Promiscuity**

The following section will review Moffitt's theoretical model on the development of antisocial behavior (1993). In the current study, Moffitt's model is used as the framework for proposing an exploratory model to explain the development of promiscuous sexual behavior in juveniles. Equifinality in the development of juvenile antisocial behavior is important to consider. There has been incremental support for a developmental taxonomy of antisocial behavior that suggests two distinct pathways that result in the same behaviors. According to Moffitt, youth who engage in antisocial behavior comprise two distinctly different groups of antisocial youth; some that began their engagement in antisocial behavior as young children and another group that began engaging in antisocial behavior as adolescents (1993). Moffitt coined the term *life-course-persistent* (LCP) to describe the early starters and the term *adolescence-*

*limited* (AL) to describe the group who both begin and end their engagement in antisocial behavior before reaching adulthood. While these two groups may appear identical in adolescence with respect to their engagement in antisocial behaviors, each engaging in criminal behavior at approximately the same rate and severity during this time, the paths diverge again in late-adolescence to early adulthood. The only way to discriminate between LCP and AL youth during adolescence is to know the history of their antisocial behaviors. LCP youth begin engaging in antisocial behavior as young children and continue to engage in antisocial behavior through adulthood whereas AL youth begin in adolescence and desist prior to adulthood (Moffitt, 1993). The ability to differentiate between the two groups of antisocial youth is important for predicting which kids will desist and which kids will persist in their antisocial ways. With very few exceptions, antisocial adults were antisocial in their youth but most antisocial youth will not be antisocial as adults, which makes the risk of a type 1 error high (Moffitt, 1993).

Antisocial behavior during adolescence is so common it may even be considered normative (Moffitt, 1993). For most adolescents, their engagement in antisocial, even criminal, behavior is temporary and situational. For the AL juveniles, engagement in antisocial behavior begins around the onset of puberty in the “maturity gap,” the time between biological maturity and socially construed adulthood (Moffitt, Caspi, Harrington, & Milne, 2002). During this developmental phase, many adolescents will try to distance themselves from their parents and may engage in antisocial behavior as a demonstration of their autonomy. Their antisocial behavior will generally desist during the transition to adulthood. However, as a result of their antisocial behavior, some adolescents may attract snares, behaviors that result from engagement in delinquent behaviors and may have long-lasting effects on their life trajectories. Snares may include incarceration, criminal record, addiction, academic underachievement, teen pregnancy,

sexually transmitted disease, or injury (Moffitt et al., 2002). In contrast to individuals demonstrating an AL trajectory, the antisocial behavior of LCP adolescents begins earlier and lasts into adulthood (Moffitt, 1993).

This study proposes to extend Moffitt's theory on the development of antisocial behavior and apply it to better understand the development of adolescent sexual behavior. Sexual behavior during adolescence is not the exception; in Western society, it is the rule. According to recent research, approximately 70% of youth in the United States have engaged in sexual intercourse by their eighteenth birthday (Carver, Joyner, & Udry, 2004). Like antisocial behavior, there may be multiple pathways that lead to adolescent sexual behavior. Using ten years of longitudinal research, Zimmer-Gembeck and Helfand (2007) describe the two pathways. The LCP group consists of youth that are less conventional as indicated by engagement in riskier sexual behavior with an onset much earlier than their peers. The adolescent-limited group would engage in less risky types of sexual behavior and onset of sexual behavior occurs at an age when the majority of adolescents are becoming sexually active. According to these researchers, there are marked differences in the etiologies and lifetime trajectories of adolescents who become sexually active before age fourteen or fifteen and youth who become sexually active between ages sixteen and eighteen, a typical age for sexual debut in the United States (Zimmer-Gembeck & Helfand, 2007). These findings lend support for the applicability of Moffitt's developmental model to adolescent sexual behavior. Harris et al. (2007) suggested that precocious sexual debut was a better indicator of promiscuity than promiscuous sexual behavior. Adolescent sexual behavior covaries with other forms of delinquent behavior such as aggression and substance abuse so it is logical that it may develop in the same way (Capaldi et al., 1996). To date, there has been very little research examining onset of sexual behavior in the context of psychopathy and the research

that has been done has been conducted retrospectively with adult samples. To better understand the development of patterns of sexual behavior, it will be useful to conduct research with youthful samples. Longitudinal research would provide the best opportunity to examine the temporal ordering of engagement in antisocial behavior, development of psychopathic traits, and sexual debut. Harris et al. (2007) paved the way for exploration of sexual behaviors beyond promiscuity, and support for other sexual behavior as more useful indicators of psychopathic traits.

### **Statement of the Problem**

Promiscuous sexual behavior has been included as a defining feature of psychopathy although empirical support for its inclusion has been inconclusive. Promiscuous sexual behavior and multiple unsuccessful relationships, the two items assessing sexual behavior on the PCLs, have failed to load on any factor in analyses using the PCLs, especially with male samples. A recent study by this author found a positive relation between psychopathy and promiscuous sexual behavior for females in a sample of detained juveniles. However, the cross-sectional nature of this study limited the conclusions that could be drawn from it related to psychopathy and promiscuous sexual behavior.

Most people become sexually active during adolescence and sexual activity during this time is normative. During this transition into adulthood, many adolescents may engage in sexual experimentation and have sex with multiple partners. A short period of sexual experimentation may be a normal phase in the sexual development process rather than a marker for psychopathic tendencies. At some point, many of these sexually promiscuous adolescents will find a partner, and be part of a relationship for a period of time. Generally speaking, being involved in a committed relationship regulates sexual behavior, increasing the frequency of sexual activity

with the partner and reducing the incidences of sexual activity with other partners (Michaels, Gagnon, Laumann, & Kolata, 1994). Engagement in promiscuous sexual behavior over an extended period of time may indicate an inability to form meaningful and committed relationships; a central component of the psychopathy construct. It is important to know, therefore, whether promiscuity in juveniles does, in fact, map on to psychopathy and whether this is a transient phase or longer lasting. This project is important as it is one of the first to examine sexual behavior and psychopathy in a sample of delinquent youth and the only project to look at psychopathy and sexual behavior longitudinally. Given the negative outcomes for engagement in risky sexual behavior, it is important to identify whether psychopathic traits predict a trajectory of promiscuous sexual behavior.

### *Hypotheses*

The hypotheses for the current study are as follows:

- H1: The Callous-Unemotional Factor of the APSD will be significantly associated with promiscuous sexual behavior at all time points. Participants with higher levels of callous-unemotional traits at baseline assessment will engage in promiscuous sexual behavior to a greater degree than participants with lower levels of callous-unemotional traits. This trend will be maintained across the 3 follow-up assessments such that people with higher levels of callous-unemotional traits at baseline will demonstrate higher levels of promiscuous sexual behavior. The Callous-Unemotional Factor will be more strongly associated with promiscuity than the other APSD factors, Narcissism and Impulsivity.
- H2: Psychopathy score at time 1 will be predictive of risky sexual behaviors (e.g., promiscuity, unprotected sex, casual sex). The strongest association is expected between psychopathy and promiscuous sexual behavior. However, psychopathy will predict the other risky

sexual behaviors after controlling for the relationship between promiscuity and the other risky sexual behaviors.

The following exploratory hypotheses will also be examined:

EH1: Do subjects with higher levels of psychopathic traits report more negative sexual outcomes such as becoming pregnant or impregnating someone else, having an abortion or having a partner who has had an abortion, or infection with a sexually transmitted disease?

EH2: Does precocious sexual debut predict a more persistent pattern of promiscuous sexual behavior compared to youth with a later onset of sexual behavior?

## METHOD

### Participants

Initially, 132 juveniles (96 boys, 36 girls) were recruited from the Tuscaloosa Regional Detention Center, Tuscaloosa Juvenile Court, and Juvenile Conference Committee (a local judiciary diversion program) in Tuscaloosa, Alabama. Of the 129 participants who reported on their racial/ethnic background; 38 (28.6%) indicated that they were Caucasian, 89 (66.9%) indicated that they were Black, 1 (0.8%) Hispanic, and 1 (0.8%) Native American. At baseline, the boys and girls ranged in age from 11-18 with a mean age of 15.4 years old. There was attrition across the three follow-up periods due to relocation, inaccurate contact information, and refusal to participate. 90 juveniles took part in the 6-month follow-up, 94 in the one-year follow-up, and 79 in the two-year follow-up. Participants were paid \$5 for participation at baseline, \$10 for participation in the 6-month follow-up, \$15 for participation in the 1-year follow-up, and \$20 for participation in the 2-year follow-up.

### Measures

#### *Psychopathy*

Psychopathy was measured using The Antisocial Process Screening Device (APSD; Frick & Hare, 2001, see appendix B). The APSD is a self-report trait and behavioral rating scale for assessing psychopathy in children and adolescents. The measure consists of 20 items each scored on a three-point likert scale: 0 (*not at all true*), 1 (*sometimes true*), or 2 (*definitely true*). The items are summed to yield a total score that can range from 0 to 40. There is no cut-off score for making psychopathy determinations; instead, psychopathy is considered a dimensional concept.

The relationship between psychopathy and promiscuity is the central focus of the current research study. The APSD was employed to measure psychopathic traits in the current study. Because it does not include any sexual behavior items, it reduces the tautology that may have been problematic if a psychopathy measure with explicitly sexual content, such as the PCL:YV had been used.

Research on the measure has demonstrated both two- and three-factor structures adequately fit the data. Frick et al. (1994) initially proposed that the APSD was comprised of two factors; Impulsive/Conduct Problems (I/CP) factor ( $\alpha = .82$ ) and Callous-Unemotional (CU) factor ( $\alpha = .73$ ). However, past research has shown that the reliability for these scales can be quite low, ranging from .46-.69 (Kotler & McMahon, 2010). In a study using the baseline sample, reported Cronbach's alpha scores for the I/CP and CU factors were .68 and .25 respectively (Rosenbaum, 2010). In a study using parent and teacher report versions of the APSD, Frick et al., 2000 found a three factor solution; Narcissism, Impulsivity, and Callous-Unemotional. The Narcissistic factor score is summed across seven items, the Impulsivity factor score is summed across 5 items, and the Callous-Unemotional factor score is the sum of 6 items. This three-factor solution has been supported using the self-report version of the APSD in an institutionalized adolescent sample (Vitacco et al., 2003). In the institutionalized youth sample, internal consistency of the APSD factors was in the low to moderate range. Cronbach's alphas for the three scales have been reported to be .74 (Narcissism), .53 (Impulsive), and .59 (Callous-Unemotional). Again, past research has found reliability estimates for these scales to be somewhat lower (Kotler & McMahon, 2010). Specific, to the baseline measures from the current sample, the alphas were found to be .36, .63, and .65 respectively.

*Promiscuity*

Promiscuity was measured via youth self-report. During the baseline assessment, participants were administered the short form of the Sexual Behavior Questionnaire (SBQ; Rosenbaum, unpublished, see Appendix C) that asked if youth were, or had ever been, sexually active. If participants reported that they had been sexually active, they were then asked at what age they first had sex, how many different partners they had had sex with, and whether they had ever forced someone into sexual activity with them. A promiscuity score was calculated by dividing the number of reported sexual partners by the amount of time participants had been sexually active. This was done to adjust for age and enable comparison between participants with varying spans of sexual activity. During the 6-month, 1-year, and 2-year follow-ups, participants were asked whether they had been sexually active since the previous research assessment, how many different partners they had sex with, and whether they had initiated non-consensual sex since that time. Following baseline assessment, participants were no longer asked to report on their age of sexual debut.

#### *Risky sexual behavior*

The Sexual Behavior Questionnaire (SBQ; Rosenbaum, unpublished, see Appendix D) was created to measure multiple aspects of youth sexual behavior. The SBQ was only administered during the 2-year follow-up. Participants were asked to report on the types of sexual behavior they have engaged in (e.g., vaginal intercourse, anal intercourse, oral sex), engagement in safe sex practices (e.g., condom use, birth control pill), frequency of safe sex practice, STD testing, and recency of STD testing.

#### *Negative sexual outcomes*

The SBQ also contains items that assess for whether the participants have experienced any negative outcomes as a result of their sexual behavior such as becoming pregnant or

impregnating someone, having an abortion or having a partner who has had an abortion, or infection with a sexually transmitted disease.

### *Demographics*

Participants were asked to complete a questionnaire asking about their gender, age, ethnicity, highest grade of completed education, and status within the juvenile justice system (e.g., probation).

### **Procedure**

Participants were initially recruited from three locations in Tuscaloosa, Alabama: The Tuscaloosa Regional Detention Center, Tuscaloosa Juvenile Court, and Juvenile Conference Committee (judicial diversion program). Juveniles recruited from the Juvenile Court and Juvenile Conference Committee were generally accompanied by a parent or legal guardian to the court hearing. In the court waiting room, the parent/child pairs were approached by a researcher and asked if they would be interested in participating in a research study. If both the child and parent guardian agreed to participate, they were either administered the questionnaire packet containing the ASPD and SBQ immediately or an appointment was made to administer the research battery at a later date. At the Tuscaloosa Regional Detention Center, participants were recruited on parent visitation days. Initially, the parent was approached in the waiting room and asked whether they would consent for their child to be involved in a research study. After the parent completed the consent form, the detained youth was approached for their assent to participate. If both parental consent and youth assent was obtained, the youth battery was administered with assistance from the researcher. Besides the measures used in the current study, the research battery included additional measures of psychopathy, personality, psychopathology, risk-assessment, as well as information on substance use, neighborhood questions, and

engagement in criminal activities. The entire battery took approximately an hour and a half to complete. Participants were given the option to complete the self-report measures on their own or with assistance from the researcher. When a participant was unable to read sufficiently well to complete the self-report measures, the researcher read the items aloud while the juvenile marked their responses on a separate form. Additionally, if it became apparent that the child was struggling with the reading (i.e., asking the meaning of words, taking a long time to complete measures), the researcher assisted them in reading the items.

The parents of research participants were contacted via phone to schedule the three subsequent follow-ups 6-months, 1-year, and 2-years from the baseline assessment. During the initial baseline assessment, parents and children were informed that they would be contacted three additional times in the future for participation in the research project. The University of Alabama Internal Review Board approved that the initial consent/assent to cover all four contacts. The researcher contacted the juveniles' parents via phone to request participation in each subsequent follow-up and to schedule an in-person appointment. Follow-up appointments were generally held at the participants' houses if they were no longer detained, or at the juvenile detention center if they were still detained or had been rearrested. Participants were also given the option to meet at a neutral location on some follow-ups (e.g., library, UA campus, restaurants). The 6-month assessment battery was identical to the baseline assessment battery and took approximately 1.5 hours to complete. The 1-year assessment battery was briefer as some measures unrelated to the current study had been removed and took approximately 1.25 hours to complete. Additional unrelated measures were removed from the 2-year assessment battery and it took approximately 45 minutes for participants to complete. Following

administration, the data was double-entered into an SPSS database by trained undergraduate research assistants.

Juvenile offenders are a difficult population to study, which is reflected in the high attrition rate across time. Obtaining accurate contact information for research participants was difficult. Many of the participants used cell phones with prepaid minutes. As a result, when they ran out of minutes, they could not send or receive calls and upon calling them one would be informed that the phone had been “disconnected or was no longer in service.” Because of the disposable nature of the phones, the participants frequently purchased new phones, which came with new phone numbers and added to the difficulty in contacting participants. The participants were asked to provide contact information for other relatives. However, attempting to contact the relatives frequently resulted in the same problems: disconnected phones and wrong numbers. Every effort was made to prevent subject attrition. When a participant unreachable via phone, researchers drove to their last known residence to inquire about their whereabouts. House calls, while sometimes effective at tracking down research participants, were tedious because people were often not home or had moved. The sample was unreliable and frequently missed follow-up appointments, even when the appointment was to be held at their house. It was not uncommon to have scheduled multiple appointments and have multiple failed attempts to get a single research subject’s participation at any given follow-up.

### **Statistical Analysis**

Over the four data collection points in the current study, there was attrition such that the sample of 132 juveniles at the baseline assessment was reduced to 79 at the 2-year follow-up. The attrition of subjects in the current study was examined to understand whether the attrition was random or if some participants were more likely to leave the study than others. To test

whether the attriters (those who did not participate in the 2-year assessment) were different than the retainees (those who participated in 2-year assessment), baseline psychopathy scores and promiscuity scores from both groups were examined with two one-way ANOVAs; one with baseline psychopathy as the dependent variable and the other with baseline promiscuity as the dependent variable.

The first hypothesis sought to examine whether CU traits (independent variable) predicted a persistent pattern of promiscuous sexual behavior (dependent variable) over time. Multilevel modeling (MLM) was used to examine the relationship between baseline psychopathy factor scores and promiscuity across the four data points. MLM refers to a set of techniques focused on decomposing the variance across multiple levels of hierarchy (Heck, Thomas, & Tabata, 2010). By accounting for dependence among repeated-measures (e.g., four assessments of sexual behavior over two years), multi-level analyses allowed us to take advantage of all existing data points. For all analyses, promiscuity scores from the four points of measurement (Level 1) were nested within individuals (Level 2).

A two-level model growth model was tested. In this growth model, the total variance in promiscuity was partitioned into variance due to between-person or within-person sources. For each measurement, an unconditional (i.e., no predictors) random intercept two-level model was estimated and an intraclass correlation coefficient (ICC) was calculated. The ICC expresses the magnitude of between-person versus within-person variance. ICCs were used to test the hypothesis that the majority of variability in promiscuity is due to within-person variation of CU traits, quantified as APSD CU factor score. The other APSD factor scores, Narcissism and Impulsivity, were also included in the model as level two predictors to examine whether they are more strongly associated with promiscuity than the CU factor.

A promiscuous sexual behavior score was computed as the number of sexual partners divided by time. For example, the baseline promiscuity score was computed by dividing the lifetime number of sexual partners by the amount of time the participant had been sexually active. At the subsequent data points, the promiscuity score was computed as the number of sexual partners divided by the number of months that had elapsed since the previous assessment. MLM is a form of regression that allows the slope, intercept, or both the slope and intercept to vary. In the current study, the slope represents the relation between psychopathy and promiscuity and the intercept equals the promiscuity score when the psychopathy score is 0. Conceptually, it made the most sense to allow both the slope and intercept to vary; psychopathy score is considered stable across time and some degree of sexual behavior, in the absence of psychopathy, is normal. The overall fit of the multilevel model was tested using a chi-square likelihood ratio test by analyzing the log-likelihood value (Field, 2009). Hurvich and Tsai's criterion (AICC), a goodness-of-fit measure corrected for model complexity and designed to be used with small samples, was used to compare the study model with a random intercept two-level model. To examine potential gender differences in the relation of psychopathic traits to promiscuity, a dummy-coded gender variable was added to level 2 of the multilevel linear model as a fixed variable.

The second hypothesis sought to examine whether psychopathy predicted engagement in risky sexual behaviors including, but not limited to, promiscuity. A series of logistic regressions and a multiple linear regression was conducted to assess the relative predictive power of study variables (psychopathy factor scores and demographic variables) at predicting engagement in a set of risky sexual behaviors including engagement in uncommitted sex, unprotected sex, and sex with multiple partners.

A multiple linear regression was used to examine the relationship between baseline psychopathic traits, demographic variables, and negative sexual outcomes at the 2-year assessment. Since sex-related outcomes were only collected during the 2-year follow-up, only those youth who participated in both the baseline and the 2-year data collection points were included in the analysis. A score was calculated to quantify negative sex-related outcomes such that points are awarded for having been pregnant/impregnating someone else (each pregnancy will be awarded and additional point) and STD infection.

Growth mixture modeling is useful in identifying non-linear subgroups within a heterogeneous population (Heck et al., 2010). From Moffitt's work we know that at any given time during adolescence, LCP and AL youth may appear identical on measures of antisocial behavior and that the best way to differentiate between the groups is to have information about the onset of the behavior. The second exploratory hypothesis examined whether Moffitt's model could account for the development of promiscuous sexual behavior. This research question examined whether precocious sex debut, predicted a chronic (life-course persistent) pattern of promiscuous sexual behavior relative to youth with a later sexual debut. One, two, and three group models were tested, in anticipation of identifying a 2-group model representing a life-course persistent trajectory and adolescence-limited trajectory.

## RESULTS

### Sample Characteristics

The baseline sample consisted of 152 youths who were either admitted to the Tuscaloosa Regional Detention Center or processed through the Tuscaloosa Juvenile Court between May 2007 and August 2008. Given the nature of the sample, there was attrition over the course of the study; the 6-month sample consists of 90 youth, 1-year sample consists of 94 youth, and 2-year sample consists of 79 youth. Eleven of the subjects at the 2-year observation reported that they had never been sexually active and were excluded from analyses examining negative sex outcomes. By the end of the study (2-year observation), 122 (93.1%) youth had reported that they were sexually active, 9 (6.9%) reported that they were not sexually active. Of the 152 subjects at baseline, 21 were screened prior to the inclusion of the Sexual Behavior Questionnaire (SBQ; Rosenbaum, unpublished) and were not included in analyses as there was no information regarding their sexual behaviors. This resulted in a baseline sample size of 131 youth participants. Table 1 presents the descriptive statistics on the outcome and predictor variables for the sample. Depending on the research question, different numbers of participants were included in the various analyses. For example, some analyses required that the participant had participated in the baseline and 2-year follow-ups due to the information that was gathered during these data collection points. Whenever possible, as many participants as possible were retained in the analyses to improve statistical power to detect effects.

To evaluate whether attrition in the study sample was random, or whether some individuals were more likely than others to leave the study, a one-way analysis of variance was conducted on two of the primary research variables (psychopathy and promiscuity). The independent variable, attrition, consisted of two levels indicating participation in the 2-year follow-up. The dependent variable was baseline psychopathy score. The ANOVA was not significant,  $F(1, 138) = 1.34, p = .25$  indicating that there was not a significant difference between the baseline psychopathy scores of individuals who remained in the study versus those who did not. A second ANOVA was conducted with baseline promiscuity score as the dependent variable. The ANOVA was not significant,  $F(1, 127) = 0, p = .99$  indicating that there was not a significant difference between the baseline promiscuity scores of individuals who remained in the study versus those who did not. Based on these analyses, attrition from the study was determined to be random.

**Potential correlates of youth promiscuous sexual behavior.** To test for potential covariates of promiscuity, we ran bivariate correlations for each baseline APSD factor, mean values of each sexual behavior, and demographic factors (i.e., gender, age of participant). Regarding the independent variables of interest, age was treated as a continuous predictor and sex and race variables were dummy coded (sex: 0 = male, 1 = female; race: 0 = White, 1 = Non-White). Intercorrelations are presented in Table 2.

### **Prediction of Promiscuous Sexual Behavior Over Time**

Multilevel Linear Modeling (MLM) with SPSS was utilized to predict engagement in promiscuous sexual behavior based on a set of demographic and research variables. The data consisted of the promiscuity scores from the four data collection points over approximately two years. Only individuals with at least two data points were included in the analyses, which resulted in a sample size of 92. The mean number of observations for promiscuity over the four

assessment periods was 3.04. The ICC was 0.06 for promiscuity score, indicating that 94% of the overall variability in promiscuity was within-person. Although the ICC score is within the acceptable range to proceed within the MLM framework, which separates within-, and between-, person variance components, the low ICC score indicates that the amount of variability between subjects is small. The higher level grouping does not affect the estimates in any meaningful way and a single-level analysis conducted at the individual level would suffice (Heck et al., 2010). Given the very small amount of between-person variance, it is not surprising that the between-person predictors of gender, ethnicity, and age did not significantly predict promiscuity.

At the within-person level (level 1), time ( $\beta = -0.29$ ,  $SE = 0.16$ ) approached significance ( $p = .07$ ) as a predictor of promiscuity, indicating that over time promiscuity decreased. Baseline centered APSD factor scores for Callous-Unemotional traits ( $\beta = 0.07$ ,  $SE = 0.14$ ), Impulsivity ( $\beta = 0.12$ ,  $SE = 0.14$ ), and Narcissism ( $\beta = -0.11$ ,  $SE = 0.11$ ) were not significant predictors of promiscuity, suggesting that psychopathic traits were not predictive of youth promiscuous sexual behavior across the four observations (*see* Table 3). There were also no significant interactions between baseline APSD factor scores and time or demographic variables. The data generally demonstrated that time moderately predicts reduced engagement in promiscuous sexual behavior.

### **Prediction of Risky Sexual Behavior**

The second hypothesis sought to examine whether baseline psychopathy predicted engagement in risky sexual behaviors including non-committed (casual) sex, unprotected sex, and sex with multiple partners (promiscuity), at the 2-year follow-up (Time 4). On the SBQ, youth were asked if their sex was *usually* in the context of a relationship or whether it was casual/one night stand. Therefore non-committed sex was operationalized as youth who endorsed

engaging in casual sex on this questionnaire item. On the SBQ, using a five-point likert scale, youth endorsed how often they were having unprotected sex, which resulted in the creation of five groups. These five groups were collapsed into two groups, youth who had had unprotected sex and those who reported never having had unprotected sex. The promiscuity score was computed as the number of sexual partners divided by the number of months that had elapsed since the previous assessment. An independent series of logistic regressions and a multiple linear regression was conducted to examine the predictors of risky sexual behavior. The predictor variables were separated into two categories, demographic variables (biological sex, age, ethnicity) and psychopathy factor scores (callous-unemotional, impulsive, narcissistic, based on the three-factor model; Frick et al., 2000), and tested separately to determine which were significant. Variables were standardized prior to inclusion.

Due to the categorical nature of the committed versus casual sex outcome variable and the combination of categorical and continuous predictor variables, logistic regression analysis was used (Tabachnick & Fidell, 2007). The first logistic regression analysis was conducted using the demographic variables to predict engagement in non-committed (casual) sex. A test of the full model against a constant only model was not statistically significant, indicating that these predictors as a set did not distinguish between youth who engaged in non-committed sex versus those who did not ( $\chi^2 = 4.78, p = .19$  with  $df = 3$ ). Although these variables as a set did not significantly predict engagement in casual sex, biological sex of the participant had a significant score statistic ( $p = .04$ ), which suggests that biological sex may be a significant independent predictor of engagement in non-committed sex.

A two-way contingency table analysis was conducted to further explore the potential effect of biological sex of the participant on engagement in non-committed sex. The relationship

between biological sex of the participant and engagement in non-committed sex approached significance, Pearson  $\chi^2(1, n = 94) = 3.05, p = .08$ , Cramér's  $V = .18$ . The chi-square test revealed that 7 of the 21 females (33%) included in this analysis reported engaging in casual sex, while 40 of the 70 males (57%) reported that they had engaged in this behavior. See Figure 1 for a graphical depiction of this trend.

A second logistic regression analysis was conducted using APSD factor scores, Callous-Unemotional, Impulsivity, Narcissism, to predict engagement in non-committed sex. A test of the full model against a constant only model was not statistically significant, indicating that these predictors as a set did not distinguish between youth who engaged in non-committed sex versus those who did not ( $\chi^2 = 1.50, p = .68$  with  $df = 3$ ). Interactions between gender and psychopathy factor scores were also tested, but none were significant.

A logistic regression analysis was conducted using the demographic variables age, gender, and ethnicity to predict engagement in unprotected sex. A test of the full model against a constant only model was not statistically significant, indicating that these demographic variables as a set did not distinguish between youth who had unprotected sex from those who did not ( $\chi^2 = 4.54, p = .21$  with  $df = 3$ ). A second logistic regression analysis was conducted using APSD factor scores, Callous-Unemotional, Impulsivity, Narcissism, to predict engagement in unprotected sex. A test of the full model against a constant only model was not statistically significant, indicating that these predictors as a set did not distinguish between youth who had unprotected sex versus those who did not ( $\chi^2 = .41, p = .94$  with  $df = 3$ ). Interactions between biological sex of the participant and psychopathy factor scores were also tested, but none were significant.

The following set of multiple regressions was conducted in accordance with the procedure outlined by Green and Salkind (2008). Two multiple regression analyses were conducted to predict promiscuous sexual behavior. The promiscuity score is a continuous variable that was calculated by dividing the number of reported sexual partners by the amount of time since their previous assessment. This analysis differs from the multilevel model because it is using demographic variables and baseline psychopathy factor scores to predict promiscuity at the 2-year follow-up only; the model mapped the change in promiscuous sexual behavior over time. One analysis included the three baseline APSD factor scores as predictors (Callous-Unemotional, Impulsivity, Narcissism), while the second analysis included demographic variables age, biological sex of the participant, and ethnicity of the participant. Both biological sex of the participant and ethnicity of the participant were included in the analysis as categorical predictors. Ethnicity of the participant was coded as white/non-white due to having too few participants of other racial groups in the study sample to test them separately. The regression equation with the APSD factor scores was not significant,  $R^2 = .02$ , adjusted  $R^2 = -.02$ ,  $F(3, 66) = .55$ ,  $p = .65$ . The regression equation with the demographic predictors was significant,  $R^2 = .18$ , adjusted  $R^2 = .14$ ,  $F(3, 66) = 4.72$ ,  $p < .01$ . The model multiple correlation coefficient was .47, indicating that approximately 22% of the variance in promiscuity in this sample can be accounted for by the linear combination of baseline psychopathy and demographic variables. Based on these results, the demographic variables of age, gender, and ethnicity appear to be better predictors of promiscuity than baseline psychopathy factor scores.

Next, a multiple regression analysis was conducted with all six predictors (APSD factor scores and the demographic variables). The linear combination of all predictors was significantly related to promiscuity,  $R^2 = .22$ , adjusted  $R^2 = .15$ ,  $F(6, 63) = 2.99$ ,  $p = .01$ . The demographic

variables predicted significantly over and above the APSD factor scores,  $R^2$  change = .20,  $F(3, 63) = 5.31, p < .01$ . The APSD factor scores did not predict significantly over and above the demographic variables,  $R^2$  change = .05,  $F(3, 63) = 1.2, p = .32$ . Based on these results, the baseline psychopathy factor scores appear to offer little additional predictive power for detecting promiscuity beyond what is predicted by demographic variables alone.

Of the demographic variables, youth age was most strongly related to promiscuous sexual behavior. Supporting this conclusion is the strength of the bivariate correlation between age and promiscuity, which was .31,  $p < .01$ , as well as the comparable correlation partialling out the effects of the other predictors, which was .35,  $p < .01$ . The results of this analysis demonstrate that older participants were more promiscuous than younger participants. Gender was also significantly related to promiscuous sexual behavior, with a bivariate correlation of -.24,  $p < .05$  and partial correlation of -.24,  $p = .05$ . This finding indicates that male study participants were more promiscuous than female participants at the 2-year follow-up (*see* Figure 2). Table 4 depicts indices to indicate the relative strength of the individual predictors. Based on the series of logistic and multiple linear regressions, the second hypothesis was rejected. Psychopathic traits did not significantly predict engagement in any of the studied risky sexual behaviors.

### **Prediction of Negative Sex-Related Outcomes**

The first exploratory hypothesis examined whether baseline psychopathy predicted negative sex-related outcomes, which were operationalized as becoming pregnant/impregnating someone else and/or contraction of a sexually transmitted disease, at the 2-year follow-up (Time 4). The negative sex-related outcomes score was calculated by adding up the negative outcomes. For example, if a participant reported two pregnancies and one STD, the negative sex-related outcomes score would be three.

The following set of multiple regressions was conducted in accordance with the procedure outlined by Green and Salkind (2008). Two multiple regression analyses were conducted to predict the negative sex-related outcomes score. One analysis included the three baseline APSD factor scores as predictors (Callous-Unemotional, Impulsivity, Narcissism), while the second analysis included a term representing the frequency participants reported past engagement in unprotected/unsafe sex. Participants only reported on frequency of unprotected sex at the 2-year follow-up. They were not given a specific period of time to consider when reporting the frequency that they engaged in unprotected sex, their responses indicated the general frequency of this behavior over the time that they had been sexually active. The regression equation with the APSD factor scores was significant,  $R^2 = .13$ , adjusted  $R^2 = .08$ ,  $F(3, 57) = 2.73$ ,  $p = .05$ . The regression equation with the frequency of unprotected sex term was significant,  $R^2 = .16$ , adjusted  $R^2 = .15$ ,  $F(1, 59) = 11.73$ ,  $p < .01$ .

Next, a single multiple regression analysis was conducted with all four predictor variables included, the three APSD factor scores and the frequency of unprotected sex term. The linear combination of all four predictors was significantly related to negative sex outcome score,  $R^2 = .30$ , adjusted  $R^2 = .25$ ,  $F(4, 56) = 6.02$ ,  $p < .01$ . The frequency of unprotected sex term predicted significantly over and above the APSD factor scores,  $R^2$  change = .18,  $F(1, 56) = 14.02$ ,  $p = .01$ . However, the APSD factor scores also predicted significantly over and above the frequency of unprotected sex term,  $R^2$  change = .14,  $F(3, 56) = 3.6$ ,  $p < .05$ . Based on these results, both baseline psychopathy scores and frequency of unprotected sex seem to be independently contributing to the prediction of negative sex related outcomes.

Frequency of unprotected sex was most strongly related to negative sex outcomes (*see* Figure 3). Supporting this conclusion is the strength of the bivariate correlation between

frequency of unprotected sex score and the negative sex outcome index, which was .41,  $p < .01$ , as well as the comparable correlation partialling out the effects of the other predictors, which was .45,  $p < .01$ . All the bivariate correlations between psychopathy factor scores and the negative sex outcome index were negative and they were all statistically significant ( $p < .05$ ). However, only the partial correlation between the Callous-Unemotional factor and the negative sex outcome index was significant ( $p < .05$ ). Table 5 depicts indices to indicate the relative strength of the individual predictors.

### **Trajectories of Promiscuous Sexual Behavior**

The second exploratory hypothesis examined whether an identifiable set of subgroups could be determined using the longitudinal promiscuous sexual behavior data. This analysis was conducted in order to examine whether adolescent-limited, and life-course persistent, antisocial behavior trajectories first identified by Moffitt (1993) could be applied to youth sexual behavior. Growth Mixture Modeling with MPlus 4.2 was utilized to try to identify homogenous subgroups of individuals within the heterogeneous sample based on the age of sexual debut. The data consisted of the promiscuity scores from the four data collection points over approximately two years. Only individuals with at least two data points were included in the analyses, which resulted in a sample size of 92. The model failed to converge when the time between observations was allowed to vary individually (e.g. MPlus could not identify or replicate reasonably fitting parameter estimates and standard errors). As such, the growth mixture model analyses included standard time estimates for observation (Baseline, 0.5 years, 1 year, and 2 years). Analyses were conducted with the number of latent class groups varying from one (no mixture) to three.

The final selection of a model is a function of the goodness-of-fit data as well as the theoretical justification and usefulness of the classifications (Nylund, Asparouhov, & Muthen, 2007). As adding additional classes always improves model fit to some degree, it must be determined that the improvement is worth rejecting a parsimonious model for a more complex one. The LMR test, for example, is one such approach. Generally, the selected model should evidence good fit to the data, have entropy values close to 1, and contain meaningful groups that are large enough to be useful. For these data, the 1-class and 2-class models are both potentially appropriate, and in fact, the 2-class model's LMR value suggests it may be an improvement over the 1-class model. However, the additional class in the 2-class model contains only three subjects, too small to be clinically useful. In light of this, the 1-class model was chosen as the most appropriate for the data. The results of these analyses do not support the utility of using age of sexual debut to make determinations about trajectories of youth promiscuous sexual behavior, consequently, the second exploratory hypothesis was rejected.

Table 1

*Descriptive Statistics*

Predictor	n	<i>M</i>	<i>SD</i>	Range	Skew	Kurtosis		
<b>Baseline Psychopathy</b>								
APSD Total	136	15.32	5.79	27	.53	.06		
APSD CU Factor	136	4.02	1.91	11	.78	.17		
APSD IMP Factor	136	5.17	2.16	10	.07	-.31		
APSD NARC Factor	136	4.51	2.70	13	.88	.74		
<b>Demographic</b>								
Youth Age at Baseline	135	15.38	1.64	7	-.50	-.51		
Sexual Debut	111	12.99	2.01	10	-.43	.04		
<b>Promiscuity</b>								
Promiscuity Score T1	131	2.28	4.81	30.44	4.57	22.44		
Promiscuity Score T2	112	1.70	2.51	14.89	3.0	11.80		
Promiscuity Score T3	95	1.72	2.15	12.18	2.54	7.83		
Promiscuity Score T4	79	1.39	2.54	17.66	4.55	24.31		
<b>Sexual Behavior</b>				% 0's	% 1's			
Had STD	64	.14	.35	85.9	14.1			
Pregnant/Impregnated	64	.52	.50	48.4	51.6			
Victim Sexual Abuse	134	.05	.22	94.8	5.2			
Sexually Active T1	133	.85	.36	15.0	85.0			
Sexually Active T2	111	.64	.48	36.0	64.0			
Sexually Active T3	95	.76	.43	24.2	75.8			
Sexually Active T4	79	.86	.35	13.9	86.1			
Casual Sex T1	114	.25	.44	74.6	25.4			
Casual Sex T2	71	.31	.47	69.0	31.0			
Casual Sex T3	72	.28	.45	72.2	27.8			
Casual Sex T4	68	.19	.40	80.9	19.1			
Risky Sex	62	2.02	1.77					
Negative Sex Outcome	64	.78	.92					
# of Pregnancies	64	.64	.82					
				% 0's	% 1's	% 2's	% 3's	% 4's
Frequency of Protected Sex	64	1.22	1.31	43.8	18.8	14.1	18.8	4.7

Table 2

*Intercorrelations Between Psychopathy, Sexual Behavior, and Demographic Characteristics*

Variable	1	2	3	4	5	6	7	8	9
1. Baseline CU	--								
2. Baseline IMP	.20*	--							
3. Baseline NARC	.04	.50**	--						
4. Baseline PROM	.08	.00	.05	--					
5. Mean CS	-.05	.08	.05	.02	--				
6. Mean NSO	-.26*	-.25	-.25	-.13	.16	--			
7. Mean FPS	.01	.01	-.01	-.20	.29*	.41**	--		
8. Gender	-.00	.04	.00	.07	-.18	-.02	.17	--	
9. Age	.01	.05	-.02	-.03	-.08	.07	.20	-.04	--

*Note.* \* indicates correlation is significant at the  $p < .05$  level, \*\* indicates correlation is significant at the  $p < .01$  level. CU = Callous-Unemotional; IMP = Impulsivity; NARC = Narcissism; PROM = promiscuity score; CS = casual sex; NSO = negative sex-related outcome; FPS = frequency of protected sex; Sex was coded: 0 = male, 1 = female; race coded: 0 = White, 1 = Non-White.

Table 3

*Multilevel Model Parameters; Predicting Promiscuity with Psychopathy Factor Scores and Demographic Variables*

	<i>B</i>	<i>SE</i>	<i>p</i>
<b>Intercept</b>	1.72	1.65	.20
<b>Gender</b>	-.19	.42	.65
<b>Age</b>	.02	.10	.80
<b>Eth</b>	.07	.40	.85
<b>Time</b>	-.29	.16	.07
<b>CU</b>	.07	.14	.64
<b>IMP</b>	.12	.14	.42
<b>NARC</b>	-.11	.11	.33
<b>CU*Time</b>	.02	.08	.83
<b>IMP*Time</b>	-.07	.08	.41
<b>NARC*Time</b>	.07	.07	.25

*Note.* CU = Callous-Unemotional; IMP = Impulsivity; NARC = Narcissism; PROM = promiscuity score; CS = casual sex; NSO = negative sex-related outcome; FPS = frequency of protected sex; Sex was coded: 0 = male, 1 = female; race coded: 0 = White, 1 = Non-White

Table 4

*The Bivariate and Partial Correlations of the Predictors at Baseline with Promiscuity Score at 2-year Follow-up*

Predictors	Correlation between each predictor and 2-year promiscuity score	Correlation between each predictor and 2-year promiscuity score controlling for all other predictors
APSD CU Factor	-0.14	-0.22
APSD IMP Factor	-0.08	-0.04
APSD NARC Factor	-0.05	0.04
Biological Sex of Participant	-.24*	-.24*
Ethnicity	-0.20	-0.17
Age of Participant	.31**	.35**

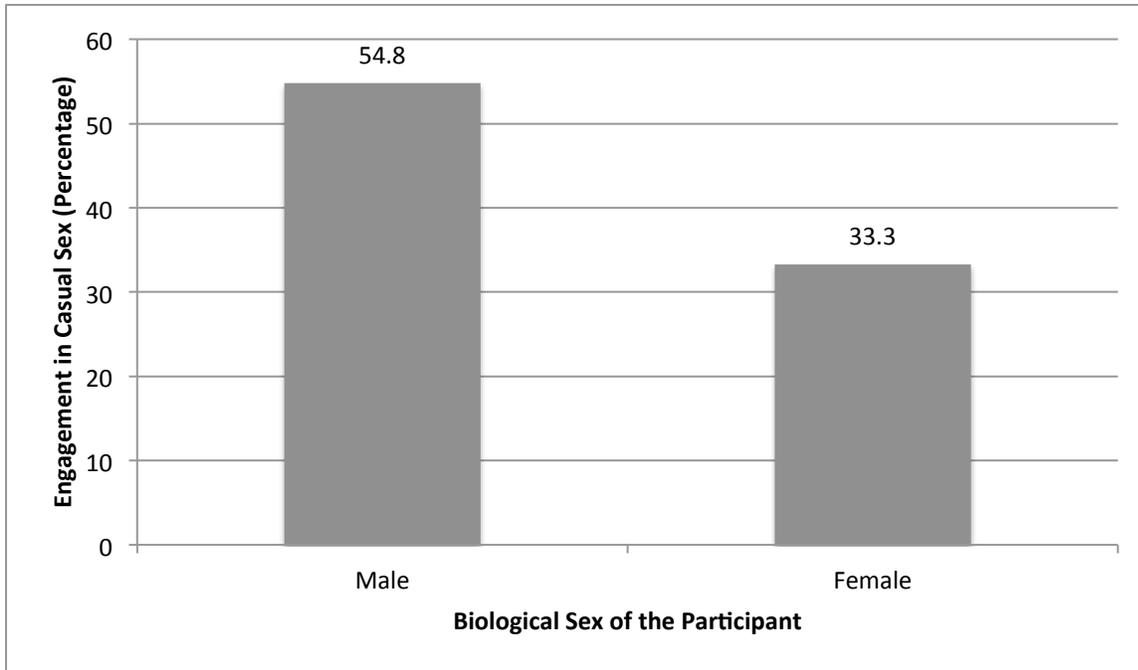
*Note.* \* indicates correlation is significant at the  $p < .05$  level, \*\* indicates correlation is significant at the  $p < .01$  level. CU = Callous-Unemotional, IMP = Impulsivity, NARC = Narcissism.

Table 5

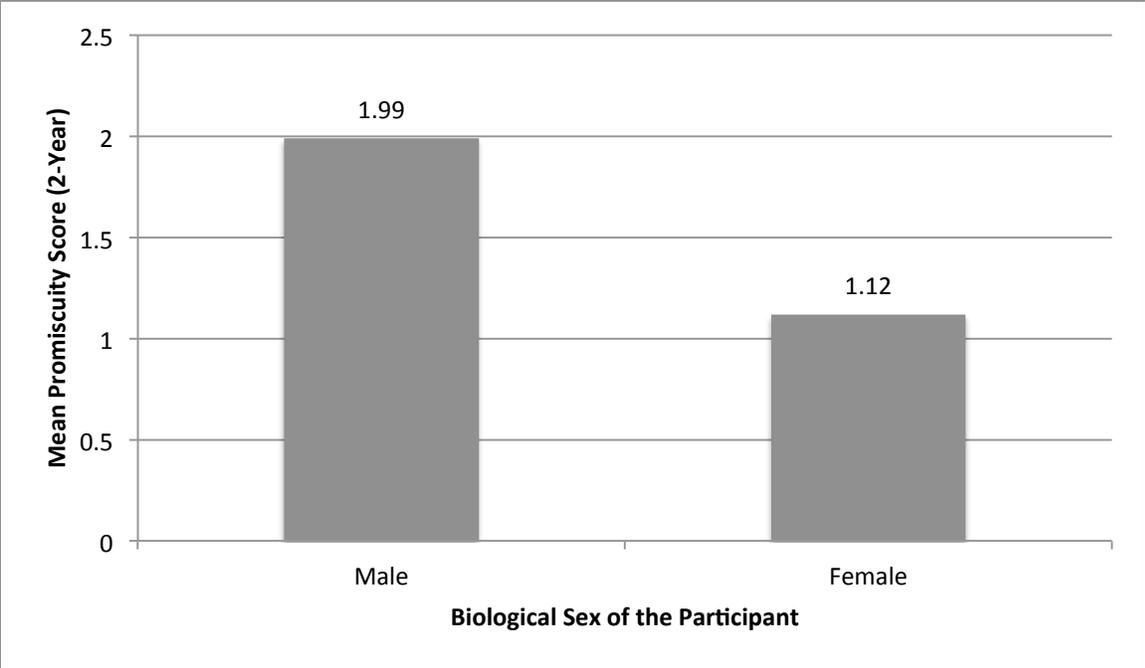
*The Bivariate and Partial Correlations of the Predictors at Baseline with Negative Sex-Related Outcomes Score*

Predictors	Correlation between each predictor and 2-year promiscuity score	Correlation between each predictor and 2-year promiscuity score controlling for all other predictors
APSD Callous-Unemotional Factor	-.25*	-.26*
APSD Impulsive Factor	-.23*	-0.09
APSD Narcissism Factor	-.26*	-0.19
Frequency of Unprotected Sex	.41**	.45**

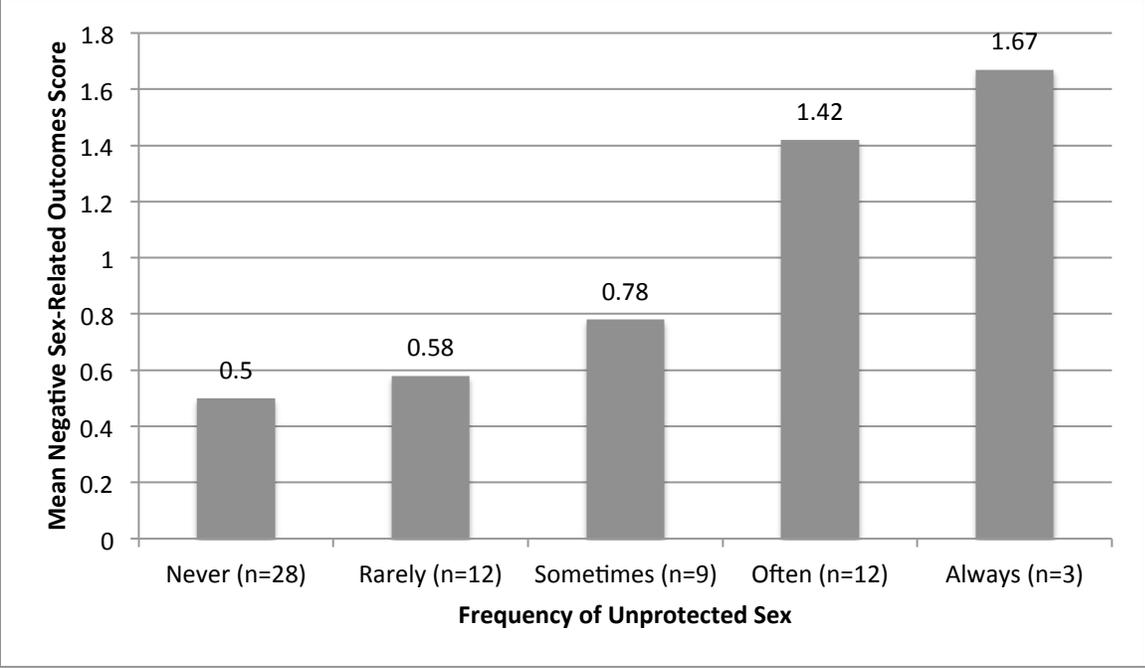
*Note.* \* indicates correlation is significant at the  $p < .05$  level, \*\* indicates correlation is significant at the  $p < .01$  level. CU = Callous-Unemotional, IMP = Impulsivity, NARC = Narcissism.



*Figure 1.* Gender invariance in engagement in non-committed sex. Each column represents the percentage of male and female participants who reported engagement in non-committed sex.



*Figure 2.* Gender invariance in promiscuity. Each column represents the mean promiscuity score for male and female participants at the 2-year follow-up.



*Figure 3.* Relation between unprotected sex and sex-related negative outcomes. Each column represents the mean negative sex-related outcomes score for various levels of engagement in unprotected sex for male and female participants at the 2-year follow-up.

## DISCUSSION

Cleckley (1941, 1976) characterized the psychopath as being deficient in the areas of affective and interpersonal functioning. One key area that is likely to be affected by dysfunction in these domains is sexual functioning and, not surprisingly, Cleckley included sexual promiscuity as a defining characteristic of this disorder. More surprising perhaps is that through the years, and the many incarnations of this disorder, promiscuous sexual behavior has remained a defining feature of psychopathy, despite the fact that there is almost no empirical evidence supporting the relation. The scant research on this topic has tended to examine the structure of psychopathy via factor analytic procedures using the Psychopathy Checklists (PCL; PCL-R; PCL:YV; Hare, 2003). Generally, factor analytic studies have shown that the two impersonal sexual behavior items on the PCL, promiscuous sexual behavior and multiple unsuccessful marriages, do not load on any factor in either the two, three, or four factor models. This has led some researchers to question whether these behaviors are part of the psychopathy construct (Skeem & Cooke, 2010). Some have suggested that promiscuity may be better conceptualized as an external correlate, or downstream consequence, of other psychopathic features. For example, as Hare was quoted earlier in this paper, it is the psychopath's complete lack of empathy and diminished affective experience that prevents him from experiencing love (Hare, 1993). Without love, a psychopath is unrestrained by the typical bonds of monogamy. In such a model, psychopathy might be conceptualized as a disorder that is underpinned by interpersonal, affective, and impulsive symptoms that then drive a set of behaviors with sexual promiscuity

being the result of one or all of these psychopathy factors. Nevertheless, promiscuity and relationship difficulties have been retained on the PCL-R, a tool that many consider to be the gold standard in the measurement of psychopathy.

Adolescence may be a good starting point for examining the relationship between psychopathy and promiscuous sexual behavior because many youth initiate their sexual behavior during this formative developmental stage. Moreover, this developmental life stage may yield important information regarding personality differences that predict engagement in risky sexual behavior and its potentially negative consequences. In addition, given that psychopathy has been extended to youth, examining the relation between psychopathy and promiscuous sexual behavior is warranted with this group.

The downward extension of psychopathy from adults to children and adolescents has been based on the assumption that the presentation of the disorder in youth will closely resemble the disorder in adulthood. It is with this assumption that promiscuous sexual behavior has been included as an item on the Psychopathy Checklist – Youth Version (PCL:YV). To date, there has been almost no research on this important topic in juvenile samples. Because of this gap in knowledge, the current study sought to examine the relationship between adolescent psychopathy and sexual promiscuity.

In this study, 152 youths were recruited from a regional detention center, juvenile court, and youth diversion program and followed up three times over two years to assess, among other factors, the effect of psychopathic traits on youth sexual behavior and the degree to which psychopathic traits predict engagement in risky sexual behaviors and result in negative outcomes (e.g., pregnancy, STD infection). The results demonstrated that the majority of the youth participants were, or had been, sexually active at some point over the course of the study.

### **Predicting long-term promiscuous sexual behavior**

The first hypothesis predicted that youth with high levels of psychopathic traits, specifically callous-unemotional traits (CU traits), would consistently engage in promiscuous sexual behavior over time while the promiscuous sexual behavior of non-CU youth would decrease over time. Because CU was theorized to be the primary factor driving the promiscuous sexual behavior, this factor was expected to have the highest correlation with sexual promiscuity while the Impulsivity and Narcissism factors were expected to show lower magnitude correlations and be less predictive of sexual promiscuity. Although this prediction was guided by theory, results of the multilevel linear model analysis failed to support this hypothesis as none of the APSD factor scores were significant predictors of promiscuity over time.

Although psychopathy may not have been significantly associated with promiscuous sexual behavior, overall, the youth in this study were certainly promiscuous. Participants engaged in sex from an earlier age and with more partners than similarly-aged peers. Nationwide, the average sexual debut occurs at approximately 17 years of age (AGI, 2013), while, in the current sample, the average age of sexual debut was only 12.9 years. These participants were also reporting far more partners than the average teenager. A study of undergraduate students with an average age of 19, reported a lifetime average of 3.79 partners and 2.54 partners, for males and females, respectively (Brown & Sinclair, 1999). In the current study, with a younger mean age of approximately 15 years, participants, especially males, reported more sexual partners, 6.86 (males) and 3.56 (females).

One plausible explanation for this finding is that although study youth had varying degrees of psychopathic traits, all of the participants were delinquent and had been in contact with the juvenile justice system, which differentiates them from a typical adolescent sample.

Promiscuity may not be related to psychopathy specifically, but rather characteristic of delinquency and antisociality, more generally. In this juvenile delinquent sample, there was almost complete overlap between delinquency and psychopathy, and this finding may highlight the shared characteristics of delinquent youth and psychopathic youth regarding engagement in antisocial behaviors. Consideration should be given to whether delinquency may be a higher order factor encompassing youth antisocial behavior. For instance, all youth with psychopathic traits who engage in antisocial behavior are considered delinquent, however, not all delinquent youth are psychopathic. Current study results provide support for the position that promiscuity is not a feature of psychopathy. Promiscuity may be solely associated to delinquency, but has been associated with psychopathy due to the high co-occurrence of psychopathy and antisocial behavior and offender samples.

Consideration should also be given to shared environmental features that may be related to youth antisocial behavior. Although socioeconomic information was not collected, tracking youth over two years revealed that most study participants were members of a transient and economically disadvantaged group. With few exceptions, participants lived in government supported housing projects, dilapidated trailer communities, and low-rent apartment complexes, and they moved frequently, often staying for periods of time with non-parent family members and friends. By and large, study participants came from single-parent homes and parental supervision was low. Additionally, many participants spent time in a juvenile detention facility where they were exposed to other delinquent peer groups. A recent study found that exposure to violence in the neighborhood was associated with a greater number of sexual partners and inconsistent condom use (Wilson, Woods, Emerson, & Donenberg, 2012; Voisin, Salazar, Crosby, DiClemente, Yarber, & Staples-Horne, 2004). Research has also shown that antisocial

adolescents, delinquent and psychopathic, feel disconnected from family and non-delinquent peers, which may result in the formation of deviant peer groups. Increased frequency of sexual activity and early reproduction are characteristic of these groups (Dishion, Ha, Veronneau, 2012). As such, delinquent youth may be drawn into anti-social peer groups (e.g., gangs), whose subculture includes early and/or frequent sexual activity (Roche & Leventhal, 2009; Voisin et al., 2004).

Although demographic variables were also not significant predictors of promiscuity in the multilevel model, age and gender significantly predicted promiscuity at the 2-year follow-up using a logistic regression. This analysis differs from the model in that it did not account for the passage of time or change in the rate of promiscuous sexual behavior from one observation to the next; it purely examined promiscuity two years after the youth entered the research study. However, it is surprising that the demographic variables did not significantly predict promiscuity when time was added into the multilevel model. A potential explanation for this seemingly contradictory finding is that when promiscuity is examined at each follow-up, the difference is only slight. However, when a more cross-sectional approach is used, the chasm between promiscuous youth and non-promiscuous youth was significantly large to be detected.

Consistent with past research, males were more likely than females to report promiscuous sexual behavior. The discrepancy between men and women regarding number of sexual partners is one of the most enduring findings in the sexual behavior literature (Laumann et al., 2000). Several theories have been put forth to explain this gender difference. One involves the role and impact of gender stereotypes on male and female sexual behavior. There is a double standard when it comes to sex; females engaging in sex with multiple partners are generally viewed unfavorably whereas it is accepted, even expected, that males have multiple partners (Clayton &

Trafimow, 2007). Social psychology research has shown that males and females endorse a Social Norm Hypothesis in which both sexes see female promiscuous behavior as deviant, which results in negative attributions towards promiscuous women (Clayton & Trafimow, 2007). These same negative attributions are not associated with males who engage in promiscuous sexual behavior. Therefore, when a woman engages in promiscuous sexual behavior she is violating strongly held societal normative expectations, which may make her less likely to engage in the behavior, or simply less likely to report it.

### **Prediction of Risky Sexual Behavior**

The second hypothesis examined whether baseline psychopathy predicted engagement in risky sexual behaviors including, but not limited to, promiscuity in a sample of delinquent youth. This question was analyzed with a series of logistic and linear regressions using baseline APSD factor scores and demographic information to predict a set of risky sexual behaviors collected at the 2-year follow-up.

Baseline psychopathy did not significantly predict engagement in either non-committed sex or unprotected sex. And while the regression containing psychopathy factor scores and demographic variables significantly predicted promiscuous sexual behavior at the 2-year follow-up, the factor scores did not predict promiscuity above and beyond the contribution of the demographic variables. These findings indicate that psychopathy was not a significant predictor of risky sexual behavior in this sample of delinquent youth.

Non-committed sex has become increasingly common. Although the behavior has been primarily studied in college-aged populations, research with adolescent samples has found that 70% of sexually active youth aged 12-21 reported that they had engaged in casual sex in the past year (Grello, Welsh, Harper, & Dickson, 2003). In a cross-sectional study of 7<sup>th</sup>, 9<sup>th</sup>, and 11<sup>th</sup>

grade students, over half (61%) reported having engaged in sex with someone with whom they were not in a relationship (Manning, Giordano, & Longmore, 2006). In the current study, casual sex was endorsed by 50% of the study sample. Although demographic variables as a set did not significantly predict engagement in casual sex, gender was a significant independent predictor ( $p < .05$ ) with more than half (57%) of the males endorsing engagement in casual sex compared to only one-third (33%) of females. The observed gender differences in sexual behavior are consistent with the literature, although accumulating research has done little to definitively explain the discrepancy between males and females.

A possible explanation for this gender discrepancy is that men and women are entering into the sexual relationships with different expectations and thus differ in their perception of the nature of the relationship. A recent meta-analysis demonstrated that men and women are more similar in their sexual behaviors than previously thought, with the notable exception of attitudes about casual sex and number of sexual partners. Across numerous studies in more than 80 countries, a consistent finding was that men have more permissive attitudes than women regarding casual sex (Petersen & Hyde, 2010; Oliver & Hyde, 1993). Men may also be more active at seeking out short-term non-committed relationships. For example, previous research demonstrated that men are almost 50% more likely than women to be actively seeking out a casual relationship (Schmitt et al, 2003). Of course, historically, the consequences of casual sex are more serious for females than for men. These consequences include social stigma, as well as the dangers, and impact, of pregnancy. Families, therefore, are more likely to emphasize and enforce the unacceptability of casual sex to daughters.

It is important to note that the youths self-reported whether their relationships were casual or committed; they were not given a set of criteria to make these determinations. Without

a standardized way of measuring committed versus casual sex, they may have differed on how they made these determinations. For example, one participant reported having 15 different sexual partners in the preceding six months, and he claimed that all of them were in the context of a committed relationship. Even a loose definition of committed relationship would be stretched to include that many committed relationships in such a short time span. And while 15 committed partners was an outlier, several youths reported having between five and six different committed sexual partnerships in the previous six months. It is easy to concatenate engagement in casual sex with high numbers of sexual partners. However, this variable only measured the nature of the sexual relationship, not the frequency. In fact, more than half of the youths who reported that their sexual relationships tended to be casual, reported three or fewer partners in the preceding six months. Without a uniform way of measuring the nature of the sexual relationship, it is difficult to interpret the findings.

A potential problem with the committed sex versus casual sex grouping, is the phrasing of the questionnaire item: “Usually, are the people you’ve had sex with: casual/one night stands or seeing for a while/in a relationship?” Only those individuals who endorsed having casual sex more-often-than-not would be included in the analyses as engaging in non-committed sex, which excludes those individuals who may be having a mix of casual and committed sex, but more frequently committed sex. Although any amount of casual sex is risky, increased frequency increases the risk. Because the current study did not distinguish between individuals who had casual sex frequently from those who only rarely or occasionally engaged in casual sex, the study results likely underestimated the risky behavior of study participants. An item assessing the frequency of casual sex would more precisely measure the risk inherent in this behavior and more accurately estimate the actual rate of non-committed sex in this sample.

The casual versus committed sexual grouping ignores the fact that many relationships change over time. Some relationships that begin as casual may become committed over time. The reverse can also be true with relationships decreasing in the level of commitment (Laumann et al., 2000). For example, in a sample of college students, two-thirds of female but less than half of the male participants reported the hope that their casual sex relationship would become a committed relationship (Owen & Fincham, 2011). Thus, it is possible that someone describing a relationship that was casual but became committed, would describe it as committed, obscuring the fact that they engaged in casual sex (i.e., at the beginning of the relationship). Expectations for a relationship may also color the manner that study participants describe their sexual partners. For example, a person desiring a committed relationship with a sex partner, may be more likely to perceive their sexual relationship as committed.

There are a number of popular theories of human mating behavior that help us make sense of these findings. According to human evolutionary theory, humans are driven to engage in sex as a means to increase their representation in the gene pool. Although both sexes are seeking proliferation, males and females go about achieving it in distinctly different ways (Garcia, Reiber, Massey & Merriwether, 2012). The differences may be best represented as quality (females) versus quantity (males). For males, sex with multiple different partners offers the best chance of passing on their genetic material to the next generation. Females must employ a more selective strategy given the increased investment they must make in each offspring (Buss, 1998; Buss & Schmitt, 1993). Therefore, they are driven to find a partner who is likely to share in the responsibilities of child-rearing, thus increasing the viability of the offspring and family unit. These different strategies help explain why males may be more likely to engage in casual sex than females, a finding supported by the current study.

Social script theory also has something to offer in this regard. Social scripts, like gender stereotypes, attempt to explain gendered sexual behavior by examining the different beliefs of, and social rules for, men and women. According to this model, men are expected to initiate sex while women are characterized as taking a more passive role (Garcia et al., 2012). Social scripts are propagated and fortified by social media such as music and television. Young adults' beliefs about sex are being influenced by the television shows they watch, and over 75% of prime-time shows containing some sexual content (Kunkel, Eyal, Finnerty, Biley, & Donnerstein, 2005). Over one third of the sex depicted on these shows took place between characters in the context of a casual relationship, often between characters who had just met (Kunkel et al., 2005). Since the 1930's and increasing exponentially in the 1960's, television and film has become the primary informal source of sex education for emerging adults, and discrepancies in the sexual behavior literature points to the impact of popular culture in modeling normative sexual behavior.

### **Unprotected Sex**

Very little research has examined the relationship between psychopathy and risky sexual behavior, and research on the topic has been equivocal. Recent work by Harris et al. (2007) has suggested that items related to promiscuous sexual behavior are not sufficient to capture the full range of sexual deviance central to the psychopathy construct. Although there has been no research examining the relationship between psychopathy and unprotected sex, it was hypothesized that the two may be related. Engagement in unprotected sex suggests impulsivity and a failure to consider long term consequences, two traits associated with psychopathy. Contrary to expectations, psychopathy did not significantly predict engagement in unprotected sex; neither did demographic variables gender, age, nor ethnicity.

In the current study, engagement in unprotected sex was quite common with almost 60%

of the sample admitting to unsafe sex at least some of the time. The failure of psychopathy to distinguish between youths who do/do not engage in unprotected sex may indicate that another shared characteristic is driving the effect. As was suggested with respect to promiscuous sexual behavior, engagement in unprotected sex may be associated with delinquency generally, not psychopathy specifically. Because the sample was comprised almost entirely of juvenile delinquents, psychopathy was not useful in distinguishing youth who engage in unsafe sex practice from those that do not.

### **Prediction of Negative Sex-Related Outcomes**

The first exploratory hypothesis addressed by this study was whether baseline psychopathy could predict negative sex-related outcomes. This question was analyzed with a series of linear regressions using baseline psychopathy factor scores to predict negative sex-related outcomes reported at the 2-year follow-up. The negative sex outcome score consisted of number of pregnancies (for males, number of times they had impregnated a woman) and number of infections with a sexually transmitted disease. Results of the regression analyses demonstrated that both psychopathy, specifically the callous-unemotional factor, and engagement in unprotected sex significantly predicted negative sex outcomes.

The negative relationship between the callous-unemotional factor of the APSD and negative sex-related outcome was unexpected. Given the dearth of research on the topic, there was no expectation for the direction of the effect. However, psychopathic traits generally have negative associations. In this study, psychopathy seems to be protective against negative sex-related outcomes, such that psychopathic youth with CU traits were significantly less likely to experience negative sex-related outcomes. One plausible explanation, at least among males, is that psychopathic participants would be less likely to pay attention to the consequences of their

behavior and thus be unaware of their negative sex-related outcomes such as having produced a pregnancy. For, girls this might also result in slower rates of recognizing that they were in fact pregnant. In addition, youth with callous unemotional traits due to their general fearlessness and lower pain threshold may be less likely to notice STDs or may choose to neglect their health issues and therefore lower the likelihood of an STD diagnosis.

Alternately, by and large, psychopathic individuals are described with a set of negative personality traits and undesirable behavior, however, they are also exceedingly high in other traits that may provide them with an advantage in some situations. One such trait that is potentially relevant in explaining the inverse relationship between psychopathy and negative sex-related outcomes is planfulness. Although some psychopathic individuals are described as being impulsive, another smaller subset of psychopathic individuals are cunning, controlled, and planful (Skeem, Johansson, Andershed, Kerr, & Loudon, 2007). It makes sense that psychopathic individuals with these traits might be better able to consider the future consequences of their actions, and thus choose to engage in behavior that would diminish their risk of negative outcomes. Regarding sexual behavior, this may mean engaging in protected sex (e.g., condom use) or more careful sexual partner selection. It is also always a possibility that participants were not honest in their responses to questionnaire items, as lying and manipulation are other traits often ascribed to the psychopathic personality. More research is needed to confirm this finding and interpret its meaning.

The linear relationship between frequency of unprotected sex and negative sex outcomes is not particularly surprising. After all, people use prophylactics and birth control measures to prevent against unwanted pregnancy and venereal disease. It is therefore a common-sense finding that as unsafe sex practices increase, so too does sex-related negative outcomes.

However, this finding does suggest that the participants were responding to the questionnaire truthfully. Had there been no association, or worse a negative relationship, between engagement in unprotected sex and negative sex outcomes, the veracity of participant responses would have been called into question. Truthful responding to self-report measures is always a concern, especially given the sensitive subject content. Although this finding does not assure that participants were fully forthcoming regarding their sexual behavior, it does provide a useful check on the integrity of the data.

Age was also significantly related to negative sexual outcomes. This is also not surprising as more advanced age allows for more years of sexual activity, and a higher likelihood of becoming pregnant or becoming infected with a STD if engaging in frequent unprotected sex. Unlike other items in the sexual behavior questionnaire, there was no time frame on the items reflecting negative sex outcomes. For example, whereas promiscuity score was calculated to control for the time that the participant was sexually active, the items about negative sex related outcomes asked if the participant had ever been pregnant/impregnated someone else or been infected with a sexually transmitted disease. Therefore older participants who have consistently engaged in unprotected sex had more time to incur negative sex outcomes than younger participants, even if they were engaging in unprotected sex at the same rate.

### **Trajectories of Youth Sexual Behavior**

The second exploratory hypothesis examined whether two different trajectories of youth sexual behavior could be identified using age of sexual debut as a grouping variable. To evaluate this, a Growth Mixture Model was analyzed with study participants who had participated in at least two data collection points. Although the analysis supported either a single group or two-group solution, there were only three individuals in one of the groups, suggesting that age of

sexual debut was not a particularly useful variable for predicting future sexual behavior.

This hypothesis was loosely based on Moffitt's work, which demonstrated that there are two distinct groups of individuals who engage in antisocial behavior; a group that begins early and continues through adulthood and a group that engages in antisocial behavior primarily during adolescence. And while these groups may appear identical throughout adolescence, group membership can be predicted based on when the individual started acting antisocially, with younger age of onset predicting a more enduring course (Moffitt, 1993). The hope was that individuals could be similarly grouped based on knowledge of their sexual debut. The prediction was that precocious sexual debut would forecast an unremitting pattern of promiscuous sexual behavior, which would be distinct from a more typical pattern of sexual behavior that might include some promiscuity during the transitional period of adolescence and early adulthood. Because this was not supported in the current study, it may suggest that an early debut does not predict long-term promiscuity. Again, this finding may be attributed to the homogeneity of the sample. Although youth had varying degrees of psychopathic traits, they were all delinquent. There may be shared variance between psychopathy and delinquency, such that whatever variance may have been accounted for by psychopathy is being overshadowed by the effects of delinquency.

Another plausible explanation is that there was not enough time to separate out the AL group from the LCP group. This study only captured the earliest portion of participants' sexual lives, perhaps not enough time to identify which youths would desist from promiscuous sexual behavior and which would continue to have sex with multiple partners. In Moffitt's (1993) model, the two groups appear identical until the adolescence-limited youth ultimately desist from engaging in antisocial acts when members are in their early to mid-20's. The oldest participants

in the current study were 21 years old at the 2-year follow-up, and most were still between the ages of 16-18. To adequately test whether trajectories of youth sexual behavior can be predicted based on age of sexual debut, future studies will need to follow-up the youth into early adulthood.

### **Limitations**

While this study represents a step forward in the research literature on promiscuous and risky sexual behaviors in juveniles with varying levels of psychopathic traits, there are limitations due to the design and methodology. As with any study, the power to detect significant effects necessarily corresponds to the sample size obtained. While the present investigation started out with a reasonable sample size of 152, there was significant attrition across the three follow-up observations, and by the 2-year assessment, only 79 participants remained in the study. Thus, there was a significant amount of missing data. Data analytic procedures that are robust to missing data were employed to allow the maximum number of research participants to be retained in the analyses. However, for both multilevel linear modeling and growth mixture modeling, participants were required to have participated in at least two data collection points, which eliminated 23% of the sample. Furthermore, information regarding risky sexual behaviors other than promiscuity and negative sex outcomes were only collected at the 2-year observation, which limited those analyses to the 79 adolescents who completed the 2-year assessment. A larger sample size would allow for increased power to detect significant predictors and/or interactions. A larger sample would help confirm or reject the relevance of those predictors that approached significance in the current study. Although a sample size of 79 is adequate, there were only a small number of females, which may have resulted in insufficient power to detect potential group differences.

Also of importance in any study is the validity of the measures used. While many of the measures used in the current study were validated and are commonly used in psychopathy research, internal consistency of the APSD factors was in the low to moderate range: .36 (Narcissism), .63 (Impulsive), and .65 (Callous-Unemotional). Clearly, the internal consistency of these psychopathy scales, particularly the Narcissism factor, is below the traditionally accepted range of 0.7-0.8 (Field, 2009) indicating that the scale may not be reliably measuring the psychopathy construct. On the other hand, although the APSD has been shown to have low reliability, it continues to have construct validity. The SBQ was created for this study and included only basic counts of various sexual behaviors. Although its reliability and validity have not been established, the questions can be considered to be face-valid.

As discussed above, sex risk may have been underestimated by asking youth whether or not they “usually” had casual or committed sex. In this way, only those youth who reported having casual sex more often than not, were included in the analyses as having engaged in this behavior. Those youth who may have engaged in a combination of committed sex, and to a lesser degree, casual sex were included in the analyses as having had committed sex, thus underestimating the risk of their sexual behavior. Other SBQ items (e.g., sex, casual sex, committed relationship) were not operationalized for the youth, and participants may have interpreted the items differently, which likely impacted their responses in ways that we do not know and cannot control for. For example, although previous research has demonstrated that almost all youth include intercourse in their definition of sex, to varying degrees, they also include other sexual behaviors such as oral sex, mutual masturbation, and kissing (Randall & Byers, 2003). While these other sexual acts certainly carry some measure of risk, they would not result in pregnancy and have lower rates of STD infection, the two measures of negative sex

outcomes in the current study. If participants included oral sex partners in their count of sexual partners, it could skew the data and underestimate the relationship between promiscuity and negative sex outcomes.

### **Clinical Applications**

The number of youth who reported a negative sex outcome in the current study was disturbingly high. In Alabama, public schools are not required to offer sex education, and those that do are required by law to deliver a strong abstinence-only message (SIECUS, 2010). A review of the sex education practices, and abstinence-only versus comprehensive sex education agendas is outside the scope of the current study. However, given that the study participants are clearly not abstaining from sex, and that well over half reported unsafe sex practices at least some of the time, it seems as though additional information on safe sex practices is warranted. Even if sex education was available in study participants' schools, many of them dropped out of school, possibly before they had been exposed to the sex education curriculum. Clearly, at 51.6% of youth reporting a pregnancy and 14.1% of youth reporting STD infection, study youth are experiencing negative sex-related outcomes at an alarming rate, higher than state and national averages. All study participants were processed through the juvenile justice system, and the majority of study youth spent some time in a juvenile detention facility. Given the high rate of sexual behavior in this population, the juvenile detention center might be an ideal venue to provide sex education to this most at-risk group.

### **Summary**

The dearth of support for a relation between sexual promiscuity, relationship problems, and psychopathy have led some researchers and theorists to suggest that impersonal sexual features should be dropped from the list of defining characteristics of psychopathy. Overall,

results of the current study suggest that psychopathy is not a useful predictor of promiscuity and other risky sexual behavior, and may be more characteristic of delinquency. However, this finding may be misleading. If psychopathy is a feature of both psychopathy and delinquency, the independent predictive power of psychopathy may have been obscured in the current study by the homogenously delinquent sample. To more definitively parse out whether promiscuity is related to psychopathy specifically, or simply a result of delinquency (which co-occurs with psychopathy in commonly studied offender samples), research should be conducted with non-delinquent, community samples. To test whether delinquency, not psychopathy, is underpinning this behavior, future studies might include four groups: psychopathic delinquents, non-psychopathic delinquents, psychopathic non-delinquents, non-psychopathic non-delinquents control. Analysis of these four groups may more clearly parse out which behaviors are related to psychopathy above and beyond the contributions of a delinquent subculture.

Youth who participated in this study are different from typical adolescents in regards to their sexual behavior. They had sex at younger ages and with more sexual partners than the national average. They engaged in high rates of uncommitted and unprotected sex, and also experienced a disproportionately high number of sex-related negative outcomes. Whether delinquency can account for all of these findings is an open question and whether psychopathy contributes to these findings is unclear, given the overlap between psychopathy and delinquency in the current study. However, this study is an important first step to answering to these questions. Simply by documenting the sexual behavior of this juvenile population, we have begun to lay the framework for future research in the area.

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## Appendix A

<b>APSD</b>
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Please read each statement and decide how well it describes you **in general** (across your whole life). Mark your answer by circling the appropriate number (0-2) for each statement. Do not leave any statement unrated.

“In general . . .”	Not at all True	Sometimes True	Definitely True
1. I blame others for my mistakes.	0	1	2
2. I engage in illegal activities.	0	1	2
3. I care about how well I do at school/work.	0	1	2
4. I act without thinking of the consequences.	0	1	2
5. My emotions are shallow and fake.	0	1	2
6. I lie easily and skillfully.	0	1	2
7. I am good at keeping promises.	0	1	2
8. I brag a lot about my abilities, accomplishments, or possessions.	0	1	2
9. I get bored easily.	0	1	2
10. I use or “con” other people to get what I want.	0	1	2
11. I tease or make fun of other people.	0	1	2
12. I feel bad or guilty when I do something wrong.	0	1	2
13. I do risky or dangerous things.	0	1	2
14. I act charming and nice to get things I want.	0	1	2
15. I get angry when corrected or punished.	0	1	2
16. I think I am better or more important than other people.	0	1	2
17. I do not plan ahead or I leave things until the “last minute.”	0	1	2
18. I am concerned about the feelings of others.	0	1	2
19. I hide my feelings or emotions from others.	0	1	2
20. I keep the same friends.	0	1	2

Appendix B

**SEXUAL BEHAVIOR QUESTIONNAIRE (SHORT FORM)**

1. Were you ever sexually abused?  NO  YES

2. Are you/have you ever been sexually active?  NO  YES

If yes:

3. Age when you first had sex: \_\_\_\_\_

4. # of different sexual partners: \_\_\_\_\_

5. Usually, are the people you've had sex with:

Casual/One night stands  Seeing for awhile/In a relationship

6. Have you ever had sex with someone who did not want to have sex with you?

NO  YES If yes, # of times: \_\_\_\_\_

Appendix C

**SEXUAL BEHAVIOR QUESTIONNAIRE**

1. Since \_\_\_\_\_ (T3 date), have you been sexually active?  NO  YES  
If yes:
2. # of different sexual partners since then: \_\_\_\_\_
3. Usually, are the people you've had sex with since then are:  
 Casual/One night stands  Seeing for awhile/In a relationship
4. During this time, have you had sex with someone who did not want to have sex with you?  
 NO  YES If yes, # of times: \_\_\_\_\_
5. How often do you have unprotected/unsafe sex?  
 Never  Rarely  Sometimes  Often  Always
6. Have you had unprotected/unsafe sex in the past year?  NO  YES
7. What methods of protection have you or your partner used during sex?  
 condoms  birth control pill  IUD (intrauterine device)  
 birth control shot (e.g., Depoprovera)  withdrawal/timing  other  none
8. Have you ever been tested for a sexually transmitted disease (STD)?  NO  YES
9. When was the last time you were tested for a STD? \_\_\_\_\_
10. Have you ever had an STD?  NO  YES Which STD have you had? \_\_\_\_\_
11. Have you ever been pregnant/ impregnated someone else?  NO  YES # of times \_\_\_\_\_
12. Have you been pregnant/impregnated someone else in the past year?  NO  YES
13. What was the outcome of that pregnancy?  
 Birth  Abortion  Adoption  Miscarriage  Currently Pregnant  Other
14. Have you ever had sex with an adult (someone over the age of 18)?  NO  YES
15. How old were you when you had sex with an adult? \_\_\_\_\_
16. How many different adults have you had sex with before you were an adult (18)? \_\_\_\_\_
17. What kinds of sexual behavior have you engaged in? (check all that apply)  
 vaginal intercourse  oral sex  anal sex  other
18. What are your reasons for engaging in sexual intercourse? (check all that apply)  
 Enjoyment  Procreation  Peer Pressure  Exercise  Money (other goods)  
 Boredom  Dominance  Drinking/Drugs  Control  Other
19. How often do you have sex?  
 Never  Couple of times a month  Once a week  
 Couple of times a week  Nearly everyday

Appendix D

Protocol #07-004-R <sup>le</sup>

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

I. Identifying Information

	<b>Principal Investigator</b>	<b>Second Investigator</b>	<b>Third Investigator</b>
Name:	Randall T. Salekin	Zina Lee	
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College:	Arts and Sciences		
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Title of Research Project: The Stability of Psychopathic Traits in Adolescents (Protocol #07-004)

Date Printed: 3/20/13 Funding Source: Social Sciences and Humanities Research Council of Canada

Type of Proposal:  New  Revision  Renewal  Completed  Exempt

Attach a renewal application

Attach a continuing review of studies form

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

UA faculty or staff member signature: \_\_\_\_\_

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

Type of Review:  Full board  Expedited

IRB Action:

Rejected Date: \_\_\_\_\_

Tabled Pending Revisions Date: \_\_\_\_\_

Approved Pending Revisions Date: \_\_\_\_\_

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

Approval is effective until the following date: 4/8/2014

Items approved:  Research protocol: dated

Informed consent: dated

Recruitment materials: dated

Other: dated

Approval signature \_\_\_\_\_ Date \_\_\_\_\_