A STRUCTURAL EXAMINATION OF INTEGRATIVE THEORIES OF SEXUAL

OFFENDING AND REOFFENDING

by

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ABSTRACT OF THE DISSERTATION

A Structural Examination Of Integrative Theories Of Sexual Offending And Reoffending

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Sexual offending is considered to be one of the most heinous of criminal acts, and countless researchers have generated theories to account for the etiology of sex offending in the hopes of differentiating those who exhibit sexual deviancy from those who do not. Typically, these etiological theories fall into one of the following groups: psychodynamic, attachment, behavioral and cognitive-behavioral, biological, and psychosocial theories. Although informative, the theories that encompass these groupings are individual theories and typically non-inclusive of the others. As such, they are rarely sufficient to predict the occurrence of sexual offending outside of the context of one specific construct or trajectory.

Integrative theories of sexual offending, on the other hand, take a wide-reaching and inclusive approach in the etiology of sexual behaviors. Two such theories are Ward and Beech's (2008) Integrated Theory of Sex Offending (ITSO) and Thakker and Ward's (2012) integrated framework for sexual reoffending. Unlike other theories, these two frameworks include a provision for sexual reoffending, though there is a lack of empirical tests of these theories, and integrative frameworks more generally, to date. Given the amount of attention that sexual offending and recidivism garners, an examination of such frameworks is warranted.

Using a sample of adult male sex offenders released from New Jersey correctional facilities, the present dissertation study explored the prediction of an initial sex offense, as well as a sexual reoffense, within an integrative framework. The present study also examined the factors and temporal pathways involved in the prediction of non-sex recidivism. Exploratory factor analysis, confirmatory factor analysis, and structural equation modeling analysis were utilized.

The results of the analyses provide limited support for the usefulness and real-world application of broad and comprehensive integrative theoretical frameworks in the prediction of sex offending and reoffending. However, integrative frameworks may have increased utility in the prediction of non-sex recidivism. The research implications of these findings and the directions for future research are discussed.

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TABLE OF CONTENTS

TABLES AND FIGURES

Tables

Figures

CHAPTER 1

Introduction

This dissertation study is designed to add to the extant body of literature surrounding the etiology of sexually deviant behavior that violates criminal codes. Specifically, this study will explore the processes by which sexual offending occurs as well as the continuance of sexual offending behavior, a topic often left out of etiological study. It will also assess the similarity of factors and the temporal pathways involved in sex recidivism and non-sex recidivism outcomes for sex offenders.

The theoretical literature on sexual offending provides a number of viable psychodynamic, attachment, behavioral and cognitive-behavioral, biological, and psychosocial models for the origins of sexual offending behavior. Although informative, the theories that encompass these groupings are individual theories and typically non-inclusive of the others. As such, they are rarely sufficient to predict or explain the occurrence of sexual offending outside of the context of one specific construct or trajectory. This is in marked contrast to research findings which indicate that sexual offending is not typically the result of one individual factor, but rather, a number of interrelated factors that cross subtypes (e.g., Finkelhor, 1984; Marshall, 1993; Marshall, Anderson, & Fernandez, 1999).

More recent theories of sexual offending have taken an increasingly integrative approach; these theories are collectively known throughout the literature as integrated theories of sexual offending. Four dominant integrated theories of sexual offending include: Finkelhor's (1984) Precondition Model, Marshall and Barbaree's (1990) integrated theory, Ward and Beech's (2008) Integrated Theory of Sexual Offending

(ITSO), and Thakker & Ward's (2012) integrated theory of sex reoffending. Finkelhor's model and Marshall and Barbaree's theory are useful for the study of the emergence of sexual offending behavior, however, they are not suitable in providing an explanation for the continuance of sexually deviant behavior after an initial sexual offense. This is an important consideration, as the factors that are associated with the initiation of sexual offending are not necessarily the same as those that maintain it (Hanson & Morton-Bourgon, 2005; Kirsch & Becker, 2006). In contrast, Ward & Beech's (2008) ITSO explains both the emergence of sexual offending behavior as well as the maintenance of such behavior over time. It is postulated that groups of factors (i.e., biological, ecological, neuropsychological, and clinical) come together in the manifestation of sexual offending, forming a feedback loop in which the effects of the initial sexual offense can serve to maintain and strengthen sexually deviant behaviors, thus making a sexual reoffense more likely. Recently, Thakker & Ward (2012) adapted the ITSO to include factors identified within the literature as being important in maintaining sexual offending behavior and recidivism, specifically general antisociality, deviant sexual arousal, pro-offending attitudes and beliefs, intimacy deficits, and self-regulation problems. To date, there is a lack of empirical testing of both of these theories, as well as a lack of evaluations of integrative frameworks more generally. Given the amount of attention that sexual recidivism garners (e.g., state and federal laws designed to curb sexual recidivism, state sexual offender registries, increased media attention) it is surprising that few researchers have attempted to test such theories that also include a framework for sexual reoffending. Further, although there is evidence that offenders convicted of a sex crime are more likely to recidivate with a non-sex crime than a sex crime (e.g., Hanson &

Bussière, 1998; Hanson & Morton-Bourgon, 2005), explorations of the application of integrative models for general offending have not been completed.

The purpose of this dissertation study is to explore the etiology of sex offending and reoffending within an integrative framework, as guided by elements of Ward & Beech's (2008) ITSO and Thakker and Ward's (2012) integrated theory of sexual reoffending, using a sample of adult male sex offenders released from New Jersey correctional facilities. Specifically, models predictive of sexual offending and reoffending will be developed and evaluated to aid in further understanding of sex offending etiology. The applicability of these models to non-sex (i.e., general) offending will also be assessed. Each hypothesized model will be tested utilizing exploratory factor analysis, confirmatory factor analysis, and structural equation modeling (SEM) techniques.

This study will add to the extant literature in a number of ways. First, the present study is the first known empirical test of any integrative theory of sexual offending that also includes an analysis of sexual reoffending. Thus, the present research is quite exploratory in this regard. Second, there is a lack of consensus within the literature regarding the prediction of sexual recidivism as it relates to offender characteristics (particularly denial/minimization of offenses and sexual abuse victimization). The present study will add to this discussion and provide clarity on such issues through the utilization of SEM, as SEM offers an increased methodologically rigorous way to examine the accuracy and overall quality of proposed models and frameworks while determining the relationships between observed factors and variables. Finally, the present study will determine if the processes and pathways that predict sexual recidivism

among sex offenders are also able to adequately predict the presence of a non-sex offense.

The following chapters present a review of the literature, the methodology used, the research findings, and a discussion of the policy implications and known limitations, while also outlining directions for future research. Chapter 2 discusses rates of sexual offending and provides a review of explanations of sexual offending etiology. This chapter also presents the theories of interest in the present study, as well as two integrative theories that are predecessors to Ward and Beech's (2008) and Thakker and Ward's (2012) research (i.e., Finkelhor's [1984] Precondition Model; Marshall and Barbaree's [1990] Integrated Theory). Chapter 3 details the study's importance to the field and presents the research questions and attendant hypotheses. In Chapter 4, the study methodology is reviewed, and results are presented in Chapter 5. A discussion of the research findings is presented in Chapter 6. Finally, the study limitations and the directions for future research are described in Chapter 7.

CHAPTER 2

Literature Review

Sexual offending is perceived as one of the most heinous of criminal acts, with consequences for victims, families, and society at large. Following a number of highly publicized sexual abuse cases (particularly by violent, repeat sex offenders) in the United States during the 1990s, the federal government and states passed sex offense-specific legislation with aims of reducing the risk of sexual abuse and protecting the public from recidivist sex offenders. Although passed with good intentions, and despite findings of their ineffectiveness in meeting these goals (e.g., Sandler, Freeman & Socia, 2008; Schram & Milloy, 1995; Tewksbury & Jennings, 2010; Vásquez, Maddan, & Walker, 2008; Zgoba, Veysey, & Dalessandro, 2010), such legislation is a step in the direction of sexual abuse prevention. However, in order to truly prevent sex crimes from occurring (and re-occurring), an increased understanding of the factors and processes predictive of sex crimes must be achieved.

Sexual Offending and Victimization Rates

An initial step is to understand actual rates of sexual offending and determine who is committing such offenses. Studies show that between 5% and 20% of men admit to exhibiting at least one instance of sex aggression (Grotpellier & Elliot, 2000; Koss, 1987; Lisak & Miller, 2002), and nearly 2% of the male population will be convicted of a sex crime by age 40 (Marshall, 1997). These rates may be highly underestimated, however. It has been well established that sex crimes often remain unknown to law enforcement. In 2011, 243,800 rapes/sexual assaults were acknowledged by victims throughout the United States in the National Crime Victimization Survey, yet only 27% of these were

actually reported to police (Truman & Planty, 2012). Underreporting or non-reporting can occur for a number of reasons. Victim belief that reporting a crime will result in action by law enforcement has been identified as a motivator for reporting sexual offending (Laub, 1981); thus, most victims of sexual abuse are hesitant to call the authorities because they do not believe any legal proceedings will occur. Self-blame may also play a role in the non-reporting of abuse to authorities, especially when the victim believes the victimization will be perceived negatively by others (Finkelson & Oswalt, 1995). Additionally, there is evidence that victims who know their offenders do not report crimes for fear of retaliation or additional victimization (Bachman, 1998; Fisher, Daigle, Cullen, & Turner, 2003; Greenfeld et al., 1998). It is no wonder then that the American Medical Association (AMA) deemed sexual abuse a "silent-violent epidemic" (AMA Press Release, 1995).

Sexual Offending Etiology: Individual Theories

Exploring the emergence of sexual offending behaviors is particularly important given this "silent-violent epidemic," and there are a number of theories and frameworks that have been conceived to explain its development. These theories typically fall into one of several categories, including psychodynamic, attachment, behavioral and cognitive-behavioral, biological, and psychosocial categories. While some of these theories lack sufficient empirical support and have largely been abandoned, some explanations have been validated and form the basis for more integrative approaches to the study of sexual offender etiology.

Early explanations of sexual deviancy were conceived within the field of psychoanalysis, and popularized thanks to Sigmund Freud. Freud (1905) deemed

individuals' sexual desires and intimacy and behavior issues, including paraphilia, exhibitionism, voyeurism, and pedophilia, to be "perversions," and the consequence of unresolved childhood deficits from one of four hypothesized stages of sexual development (i.e., oral, anal, phallic, and genital). A criticism of these theories is that all sex offenders exhibit intimacy deficits (Marshall, 1989), yet this is not a sufficient explanation in and of itself to explain deviant sexual behavior (Terry, 2006). Also, psychoanalysts take the position that sexually deviant behavior is a deep-rooted phenomenon, and is unlikely to be successfully treated (Terry, 2006). However, sex offender samples have been found to have low sexual reoffense rates (i.e., recidivism rates of 13.4% within a 4-5 year follow-up period [Hanson & Bussière, 1998]; 13.7% within a 5-6 year follow-up period [Hanson & Morton-Bourgon, 2005]), indicating that some sex offenses are a solitary event.

In a similar vein to psychodynamic theories, attachment theorists posit that humans have a natural instinct to form emotional bonds with others, and that the bonds that are created in infancy and childhood provide a foundation for attachment later in adulthood. For sexuality specifically, adolescence is deemed to be the period that is most critical (Marshall & Barbaree, 1990). By this period of development, adolescents who have had adequate parenting have likely learned and acquired appropriate prosocial behavior, and have developed inhibitions on aggression and sexual behavior. These adolescents also possess appropriate levels of self-confidence and emotional attachment to others, and can transition to adulthood with the skills necessary to develop proper relationships with age-appropriate partners. Individuals with poor attachments are at an increased risk for committing a sexual offense due to poor social skills, little self-

confidence, and an inability to form intimate relationships with age-appropriate partners (Marshall, 1989). Thus, it is believed that they seek emotional intimacy through sex, even if they must force a partner to participate (Marshall, 1989). The role of attachment in the emergence of sexual deviancy has limited support. Although research has determined that the majority of sex offenders have insecure attachments (i.e., Ward, Hudson, & Marshall, 1996), attachment has also been used as a predictor of for non-sex crimes, including juvenile delinquency generally (Johnson, 1979; Kolvin, Miller, Fletting, & Kolvin, 1988; McCord, 1979), underage drinking (Lac, Crano, Berger, Alvaro, 2013), and substance abuse (Thorberg & Lyvers, 2010), among others. Thus, attachment theory may be an inadequate explanation for sexual offending behaviors solely, and may be a better explanation for general criminality overall.

Unlike psychodynamic and attachment explanations of sexual deviancy, behavioral theorists believe that such behavior is conditioned over time, and reinforced by positive rewards (Kear-Colwell & Pollock, 1997). Further, it is assumed that multiple factors work together to develop and produce inappropriate behaviors, for example, a disturbed developmental history, disinhibition, and deviant sexual fantasies (Wolf, 1985). Cognitive-behavioral theory builds on behavioral explanations by taking into consideration offender cognition. These theorists posit that sex offenders are able to legitimize their behavior, and the behavior of their victims, through cognitive distortions (Abel, Becker, & Cunningham-Rather, 1984). These cognitions can include the view that children are sexual objects or that sexual behavior is not harmful to the victim, among others (see Ward & Keenan [1999] for a discussion of additional distortions). At this time, it is unclear if behavioral and/or cognitive-behavioral theories can adequately

explain the etiology of sexual deviancy by themselves. Empirical studies are limited, though there are published accounts of the effectiveness of behavioral and cognitive-behavioral treatments with this population. Meta-analytic reviews have concluded that cognitive-behavioral interventions are associated with decreased rates of sexual recidivism (e.g., Hall, 1995; Polizzi, Mackenzie, & Hickman, 1999), leading one to surmise that behavioral and cognitive-behavioral processes must be at work in some capacity in sexual deviancy if treatment programs geared towards resolving such conflicts are providing positive results.

Biological theories of sex offending have also been formed within the field. These theories hypothesize sexually deviant behaviors to be a result of abnormalities in biological and hormonal functioning; for example, the relationship between aggression and higher levels of testosterone in male rapists (Money, 1970; Rada, Laws, & Kellner, 1976). These theories have largely fallen out of favor, mainly due to conflicting empirical findings that show a sole association between biological functioning and sexual deviancy. Many researchers have concluded that even when a hormonal imbalance is present in a male to act as a catalyst for violence, environmental and social learning factors must still be present in order for sexual aggression to occur (e.g., Hays, 1981; Hucker & Bain, 1990; Kreuz & Rose, 1972).

One final category of etiological explanations for sexual deviancy includes psychosocial theories. Psychosocial theories take into consideration the effect of environmental influences; specifically, psychosocial explanations hypothesize that deviant sexual behavior is a response to factors external to the individual, and that a connection exists between these factors and individual psychological processes (Terry,

2006). Thus, sexual offending behaviors can be learned through personal experiences (e.g., childhood sexual abuse), or can be reinforced through larger socio-cultural characteristics (e.g., pornography). Empirical tests of psychosocial theories have found support. Researchers have discovered that characteristics of societies can impact sexual abuse occurrence (e.g., males being more likely to rape if given instructions it is acceptable behavior [Quinsey, Chaplin, & Varney, 1981], or the association between violent pornography and sexual violence [Allison & Wrightsman, 1993; Gray, 1982]). Additionally, a history of sexual abuse is more prevalent among sex offenders than among offenders of non-sex crimes (Jespersen, Lalumière & Seto, 2009), giving credence to the idea that sexual offending behaviors can be learned.

Given the mixed findings of empirical tests of these theories, and the apparent overlapping of many viewpoints, the etiology of sexual offending needs continued exploration. Although informative and a contribution to the field, each subcategory is largely individualized and has shortcomings, including the inability to account for multiple forms of sex offender typology, sex offending behavior, or victim. This is in distinct contrast to research findings which have concluded that sexual offending behaviors are not typically the result of one individual factor, but rather, a number of interconnected factors that generally cross subgroups (e.g., Finkelhor, 1984; Marshall, 1993; Marshall, Anderson, & Fernandez, 1999).

Sexual Offending Etiology: Integrative Theories

Although rare, there are published theories that have taken an integrative approach to the study of the etiology of sexual offending. They can collectively be considered integrative theories of sex offending as they borrow heavily from the

individual theories and are an amalgamation of the various subtypes. The integrative

theories are a much needed addition to the literature given the relatively recent

recognition in criminology that sex offenders are a heterogeneous population in their risk

levels, criminal histories, treatment needs, and profiles generally (e.g., Boer, Wilson,

Gauthier, & Hart, 1997; Prentky & Knight, 1991; Prentky, Knight & Lee, 1997; Saleh &

Guidry, 2003). There are three widely cited integrated theories within the literature, and

a newer theory that includes a specific framework for sexual recidivism. They include

Finkelhor's (1984) Precondition Model, Marshall and Barbaree's (1990) integrated

theory, Ward and Beech's (2008) Integrated Theory of Sexual Offending (ITSO), and

Thakker & Ward's (2012) integrated theory of sexual reoffending. Each successive

theory tends to build on its predecessor, culminating with Thakker and Ward's (2012)

framework, a revised version of the ITSO that includes factors important in maintaining

sexual offending behavior. A review of the prior integrative theories is presented,

including Finkelhor's (1984) model and Marshall and Barbaree's (1990) theory. This is

followed by a review of the theories to be utilized in the present dissertation study,

including Ward and Beech's (2008) ITSO and Thakker and Ward's (2012) sex reoffense

framework.

   Finkelhor's Precondition Model. The Precondition Model is a framework that

accounts for child sexual abuse (specifically child molestation) by a male perpetrator.

While reviewing existing etiological theories of sexual offending, Finkelhor (1984)

identified four main components that such theories were built on: emotional congruence,

sexual arousal to children, blockage, and disinhibition. Theories in the emotional

congruence category tended to explain why an adult would find it emotionally satisfying

to relate sexually to a child; similarly, a number of theories explained why an adult might find a child sexually arousing. The third category of theories, the "blockage" theories, explained why some individuals are blocked in their ability to have their sexual and emotional needs met in normal adult relationships. Finally, a fourth group of theories proposed that conventional inhibitions against having sex with a minor are overcome or not present in sex offenders. Finkelhor believes that although these theories address predictors of sex offending as independent, separate entities, they are actually complementary processes to one another, with the first three groups of theories relating to how an individual develops a sexual interest in a child, while disinhibition explains how such sexual interest is translated into actual behavior. Finkelhor combines these four categories into the Precondition Model, to be used as both a classification scheme that also has the ability to guide treatment. A diagram of the model can be viewed in Figure 1.

Finkelhor posits that all factors related to sexual abuse can be grouped as contributing to one of four preconditions that need to be met before sexual abuse can occur. The preconditions are as follows: 1) a potential offender needs motivation to sexually abuse a child; 2) a potential offender has to overcome internal inhibitions against acting on that motivation; 3) a potential offender has to defeat external impediments to committing sexual abuse; and 4) a potential offender has to undermine or overcome a child's possible resistance to the sexual abuse.

Figure 1. Finkelhor's (1984) Precondition Model
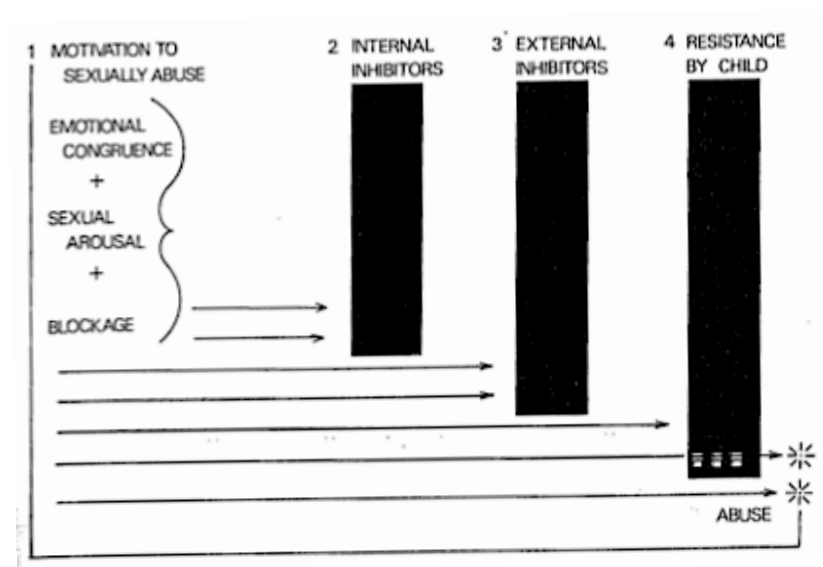
Precondition 1: Motivation to sexually abuse. Finkelhor believes that any model

that attempts to explain the occurrence of sexual abuse needs to account for how a person

becomes motivated, or interested, in having sexual contact with a minor. There are three

ways this can transpire. First, the offender must exhibit emotional congruence; that is,

the offender must feel as though relating sexually to the child satisfies an emotional need.

Second, the offender must exhibit sexual arousal towards the child, in that the child

comes to be the potential source of sexual gratification for the abuser. Third, the offender

is blocked, meaning that alternative sources of sexual gratification are not available to the

offender, or they are less satisfying.

Precondition 2: Overcoming internal inhibitors. In order for sexual abuse to

occur, the offender must not only be motivated, but must also overcome internal

inhibitions against acting on such motives. Finkelhor terms this disinhibition, and

believes that it should not be a fourth condition of motivation as many other theories

claim, but rather a separate entity given it is the rationale of why the motivation has been

unleashed. Disinhibition in and of itself is a requirement for sexual abuse; no matter the motivation, if a potential offender is inhibited from abusing, the abuse will not occur.

Precondition 3: Overcoming external inhibitors. While Preconditions 1 and 2 account for the behaviors of the abusers, they do not explain to whom or why abuse occurs. Precondition 3 is related to conditions outside of the offender and the child that serve to inhibit abuse. Examples of external inhibitors may include the supervision a child receives from other persons, or the lack of opportunities available for the abuser and child to be in the same place together.

Precondition 4: Overcoming the resistance of the child. According to Finkelhor, children themselves play a role in whether they are abused, and any explanation of why offending occurs undoubtedly should take into account factors that are directly related to the child. Finkelhor suggests that many offenders sense that a particular child will or will not make a good target; children who feel insecure, needy, or unsupported are, according to Finkelhor, more likely to be victims of sexual abuse. A child's ability to resist or avoid abuse may be weakened because they are young, naïve, or lack information. Additionally, a child who has a previous relationship with the offender may be unable to escape or resist potential abuse. In other instances, overcoming the resistance of a child has nothing to do with the child him or herself, but is instead related to the presence of force or coercion.

Precondition Model conclusion and critique. In order for sexual abuse to occur under this model, all four described preconditions must be present and fulfilled; the presence of only one or two preconditions is not enough for sexual abuse to occur. Finkelhor believed this model to be an improvement over previous theories of sexual

offending and abuse for a number of reasons. First, it was the foremost model of its kind

to account for many forms of child abuse and many different types of perpetrators.

Second, the Precondition Model includes victim characteristics as a contributing factor to

the offense (though it does not place blame on them). Third, Finkelhor acknowledges

that sociocultural factors may impact the onset of sexual offending; whereas other

theories are quick to dismiss the environment's role on the etiology of sexual abuse, the

Precondition Model recognizes that social factors may contribute and perpetuate the

sexual abuse of children at any of the four levels, such as a societal infatuation with youth

and smallness, the availability of child pornography, and the failure of external inhibitors,

among others. Finally, the Precondition Model has implications for treatment in working

with abusive families and individuals. Finkelhor contends evaluation and intervention

can operate at each precondition to prevent sexual abuse from reoccurring.

　　　As noted by Ward and Hudson (2001), the Precondition Model was the first

multi-factor model developed to account for child sexual abuse and "has proved to be of

inestimable value to researchers and clinicians alike" (p. 293). Despite its influence, the

Precondition Model is not a perfect explanation of the etiology of sexual offending.

Firstly, the model is not designed to account for any sexually deviant behavior outside of

child sexual abuse. Although different processes may be at work in child sexual abuse

and adult sexual abuse, the reverse may also be true as well; Finkelhor, however, makes

no mention of such, and the Precondition Model is largely unable to account for cases in

which children and adults are victims of the same sexual offender. In a similar vein, the

model does not sufficiently explain why some individuals choose to sexually abuse a

child to meet their arousal needs (i.e., Precondition I) rather than use another avenue,

such as viewing pornography (Ward & Hudson, 2001). As Ward and Hudson (2001) point out, a description of the links between the offender's needs and the sexual processes that lead to sex offenses against children is warranted.

The Precondition Model also excludes a number of factors that can potentially impact the onset of sexual abuse by an offender. For example, the inclusion of sociocultural context appears as a mere afterthought; although Finkelhor acknowledges that the offender's environment can impact the onset and occurrence of sexual offending at any of the four preconditions, it is not explicitly included nor described within the model. Additionally, the model provides no attention to developmental factors and instead focuses on proximal causes of sexual offending (Ward & Hudson, 2001). Though the motives for sex offending are outlined in Precondition I, there is no explanation of their "developmental trajectory" (p.299) or how they are formed to create an individual's likelihood to commit a sex offense (Ward & Hudson, 2001). Taken together, all of these issues expose the model's vulnerabilities in explaining all forms of sexual abuse and sufficiently detailing the etiology of sexual offending.

Marshall and Barbaree's Integrated Theory. In *Handbook of Sexual Assault: Issues, Theories, and Treatment of the Offender*, Marshall and Barbaree (1990) introduce their attempt at an integrated theory that explains the etiology of sex offending. Like Finkelhor (1984), Marshall and Barbaree believe that an understanding of male sexual offending can only be attained when all processes involved are seen as dependent upon one another and intermingled. Unlike the Precondition Model, which only minimally accommodates sociocultural factors in the context of sexual offending, Marshall and Barbaree acknowledge biological and environmental influences on sex crimes, giving

credence to the notion that nature and nurture interact in determining such behaviors. They write, "As we see it, the task for human males is to acquire inhibitory controls over a biologically endowed propensity for self-interest associated with a tendency to fuse sex and aggression" (p. 257, Marshall & Barbaree, 1990).

    Biological influences. Marshall and Barbaree maintain that sexual tendencies have a biological basis, but that this biological foundation does not conclusively lead to abnormal sexual behaviors. They contend that throughout the course of human evolution, males have been provided with behavioral characteristics that can be employed in the process of obtaining sexual goals. In this way, "human males are capable of using aggression, threats, or coercion in a sexual context" (p. 258, Marshall & Barbaree, 1990). However, one's biology serves as a pretext for social learning, which provides for the possibility of sexual deviancy, rather than definitively determining such an outcome. Once social behaviors have been learned, acquired, and established (predominately during adolescence), the contribution of biological factors is said to be minimal. In sum, Marshall and Barbaree argue that a biological perspective of sexual offending in and of itself is insufficient, as biological factors confront a developing pubescent boy with the responsibility of learning to separate sex and aggression and inhibiting aggression in a sexual context. While biology makes this difficult, environmental factors play a larger role in shaping the expression of sexual needs and in reigning in aggression for future adult experiences.

    Environmental influences. According to the theory, there are three major environmental factors that influence a developing male to respond to the sudden and often extreme changes that occur during puberty and which initiate a strong desire to

engage in sex and aggression as an adult. These three factors have the ability to influence the adolescent male to respond to bodily changes in either a prosocial or an antisocial manner, and they include childhood experiences, sociocultural context, and transitory situational factors.

This integrated theory assumes that the early childhood developmental experiences of boys who later go on to commit sex crimes inadequately prepare them for the extreme bodily changes that occur during puberty. Poor socialization, particularly a violent parenting style and exposure to physical and/or sexual abuse, is theorized to facilitate the use of aggression and cut the youth off from access to appropriate sexual interactions later in life. It also serves to inhibit the normal development of intimacy and empathy, leaving them lacking in self-confidence and producing a persona that is self-centered, hostile, aggressive, and negatively disposed towards women.

The sociocultural context of the offender is also taken into account, and the importance of factors outside of the family increases as the child grows up. Marshall and Barbaree identify the specific characteristics of societies that serve to affect the frequency of sexual offending, particularly rape; these characteristics include the acceptance of interpersonal violence as a way of dealing with problems, male dominance, prevailing negative attitudes towards females, and the availability of pornography. The authors maintain that some males are more vulnerable to the influences of these characteristics than others, particularly those males who are predisposed to antisocial attitudes due to poor childhood developmental experiences.

Finally, Marshall and Barbaree contend that certain environmental factors interact with particular states of the individual to further facilitate the possibility of sexual

aggression and offending. These may include alcohol consumption at the time of the offense, anger (particularly hostility towards females), and sexual arousal prior to exposure to particular types of sexual stimuli (i.e., feeling "sexually excitable" (p.269) for an extended period of time prior to the offensive act, and then being presented with sexual stimuli that serves to induce said act).

Theory conclusion and critique. Marshall and Barbaree's integrated theory suggests that a number of processes converge to produce sexual deviancy by an individual. Biological factors inherent to all males provide for a capacity to sexually offend, which must be overcome through the learning of appropriate social behaviors that inhibit such offenses. A lack of proper socialization, predominately brought on by poor parenting, fails to inhibit the expression of these sexual behaviors, serving to form a connection between sex and aggression rather than separating it. Sociocultural factors may enhance these issues, especially if societal views reinforce the use of violence, male dominance, and negative attitudes towards females. Further, situational environmental stressors, like alcohol and anger, may advance the already-present fragile constraints against sex offending. In sum, sexual offending is an amalgamation of all of these factors, and cannot be brought on simply by the presence of one solitary component.

Marshall and Barbaree's integrated theory advances knowledge and understanding of why offenders commit sex crimes. Unlike the Precondition Model, this integrated theory considers the role that biological and developmental characteristics play in sexual deviancy in adulthood. Further, the theory is able to account for different forms of sexual abuse including and above that of child sexual abuse. However, there are flaws with the theory. For consideration is that aggression is presented as playing an integral

role in both biological and environmental components, yet researchers have only conclusively found an association between aggression and rape (i.e., Money, 1970; Rada, Laws, & Kellner, 1976) and have not found a connection between aggression and other forms of sexual offending (Ward & Siegert, 2002; as noted in Thakker & Ward, 2012). Also, while Marshall and Barbaree consider evolution within the biological foundation of sexual offending, they do not account for deficits on a physiological level that may contribute to sexual offending. Finally, the maintenance of sexual offending is never addressed, and it is unclear if sexual deviancy is enhanced over time to produce recidivist acts, and if such recidivism can be explained using the same theory. These issues are addressed, however, in a subsequent integrated theory, Ward & Beech's (2008) Integrated Theory of Sex Offending.

Ward and Beech's Integrated Theory of Sexual Offending. In 2006, Ward and Beech introduced their first integrated framework to explain the onset, occurrence, and maintenance of sexual offending. In 2008, they released a more refined version of the theory, the Integrated Theory of Sexual Offending (ITSO). The ITSO is described as a broad yet comprehensive etiological framework that is able to describe the "clinical phenomena" (p. 21) of sexual offenders, as well as all causal mechanisms of sex offending. Thus, it can be used to sufficiently explain various types of sexual offending rather than one specific form.

Ward and Beech explain the ITSO as having both horizontal and vertical depth; the horizontal depth refers to the ecological and multisystemic nature of the theory, while the vertical depth refers to the ability of the theory to provide for a multilevel analysis of sexual offending. According to the ITSO, sexual offending is largely caused by three

main factors (what they term as biological factors, ecological niche factors, and neuropsychological factors), though there are other processes that impact such factors dynamically to produce a sexual offending act. More specifically, genetic predispositions and social learning have an impact on brain development and result in the establishment of poor neuropsychological functioning. This poor neuropsychological functioning subsequently generates clinical problems, which consequently lead to the sex offense. The ramifications of the sex offense serve to create a feedback loop that entrenches sexual deviancy by altering the offender's ecological and neuropsychological functioning. An illustration of the ITSO can be viewed in Figure 2. A brief synopsis of each element of the ITSO will now be presented.

Figure 2. Ward and Beech's (2008) Integrated Theory of Sex Offending
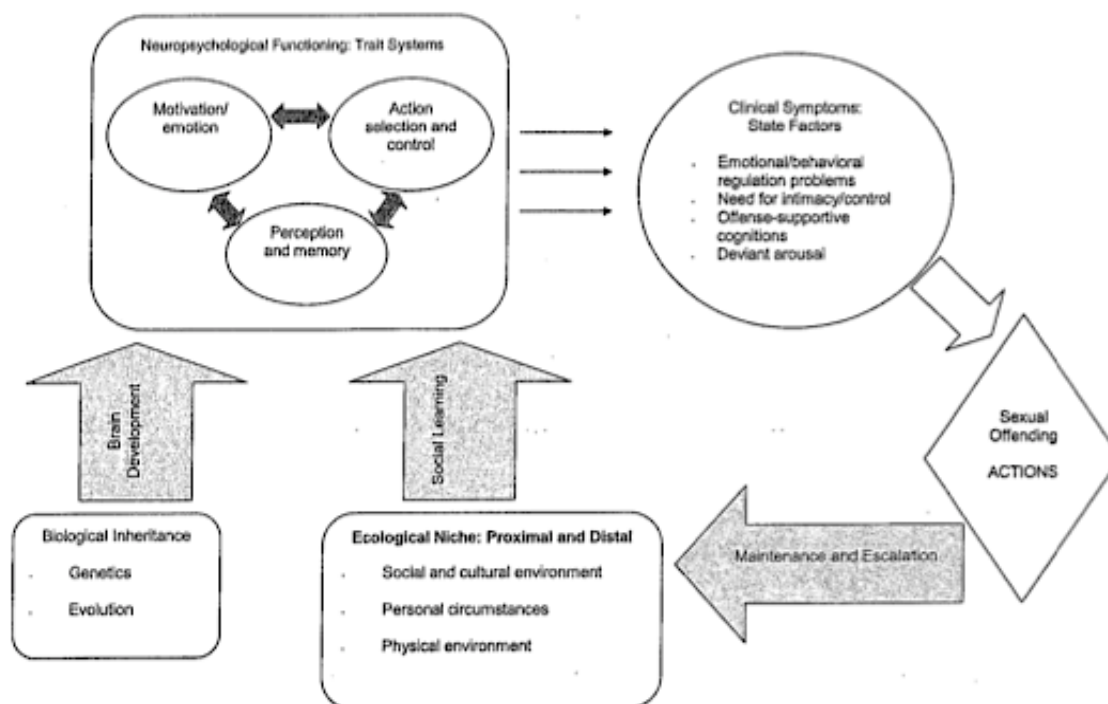
Biological inheritance and brain development. According to the ITSO, the first source for sexual offense-related vulnerabilities is brain development. Ward and Beech

point to evolution as playing a key role in the brain development of sexual deviancy, given that Darwin's (1859) theory of natural selection also provided a component for sexual selection in that male and female members of a species demonstrate preferences in their choice of mate, based on the physical or behavioral characteristics of such organisms. This sexual selection has been linked to the tendency for males to engage in impersonal sex (Brennan & Shaver, 1995), or for males to rape if they cannot find a suitable sexual partner (Thornhill & Palmer, 2000). Genetics may also play a role in the acquisition of a sexual offense. For the ITSO specifically, Ward and Beech explain that the causes of sexually aggressive behavior are likely to have a naturalistic basis, and that motivational and cognitive biases create a situation whereby individuals seek basic human needs (e.g., relationships, sexual satisfaction) in socially unacceptable ways. Finally, structural brain damage or malfunction can have an effect on sexual behavior. This damage may increase the probability of socially unacceptable sexual behavior by increasing the strength of sexual desires and/or by weakening impulse control.

Ecological niche factors. In the ITSO, ecological niche factors represent the set of social, cultural, and personal circumstances and physical environments that confront each individual throughout their lives and may cause one to commit a sexual offense. Such circumstances may come in the form of a distal dimension (i.e., the individual cannot effectively meet an environmental challenge and subsequently offends; for instance a psychological impairment) or proximal dimension (i.e., the environment makes a contribution to sexual offending; for example, the experience of fighting in a war [Henry, Ward, & Hirschberg, 2004] or losing a partner [Ward & Beech, 2006]). In sum, a major causal factor of sexual offending can reside within an individual's ecological

niche, rather than simply within the individual himself. While these factors are related to the initiation of sexual offending, they are also theorized to have an impact on the maintenance of these behaviors, to be discussed more in depth shortly.

Ecological niche factors are dynamic and can have an effect on sex offending processes at any point of the lifespan. While many distal experiences, including fighting in a war or losing a partner, typically occur in adulthood, influences may also be present during childhood. For example, childhood sexual abuse has been found to have long-term consequences that include disrupted adult sexual functioning, poor social adjustment, gender dysphoria or confusion, or "recapitulation" (p. 53; Ward & Beech, 2006) of the abuse (Beitchman, Zucker, Hood, DaCosta, Akman, & Cassavia, 1992).

Neuropsychological functioning. Biological functioning and social learning, as preceded by brain development and ecological niche factors, can have a significant impact on an individual's neuropsychological functioning, particularly in relation to three specific arenas: motivation/emotion, perception and memory, and action selection and control. According to the theorists, problems in one's genetic inheritance, cultural upbringing, or other negative experiences may lead to deficits in the motivational/emotional system. Specifically, Ward and Beech identify the stable dynamic risk factors (i.e., causal psychological risk factors) that have previously been recognized within the sex offender literature (e.g., Hanson & Harris, 2001; Thornton, 2002) as being indicative of disturbances in the motivational/emotional system.

The action selection and control system draws directly from the motivational/emotional system for goals to determine behavior. Deficits in this system make it difficult to plan, implement, and evaluate actions and to control behaviors and

thoughts, thus severely inhibiting achieving acceptable goals. Issues that arise from malfunctions in this system can include impulsivity, failure to inhibit certain emotions, inability to adapt easily, and poor problem solving. These are problems that also have been identified in the sexual offending literature as being stable, dynamic risk factors (e.g., Hanson & Harris, 2000; 2001; Thornton, 2002).

Finally, the perception and memory system is designed to interpret incoming sensory information and to construct representations of objects and events, subsequently making them available to other systems. Problems in this system can lead to maladaptive beliefs, attitudes, and incorrect assumptions about social encounters. Collectively, they are known as cognitive distortions (Abel, Gore, Holland, Camp, Becker, & Rathner, 1989) and can account for many of the offense-related cognitions that are described in the sex offending literature (e.g., Hanson & Harris, 2000; 2001; Thornton, 2002).

Clinical factors. The three neuropsychological functions described above can either individually or collectively create offense-related vulnerabilities under the ITSO. This reinforces the theory's ability to account for a variety of sexual crimes under differing circumstances, and allows an offender to present with varying clinical symptoms. According to the ITSO, deficits in neuropsychological functioning mix with ecological functioning to cause four clinical phenomena to emerge. These clinical phenomena are directly related to sexual offending and include emotional/behavioral regulation problems, need for intimacy and control, offense-supportive cognitions, and sexual interests.

Emotional/behavioral regulation problems include the commission of impulsive acts, poor emotional control, or other behavioral expressions of emotional outbursts.

Ward and Beech suggest that such behaviors originate in exposure to sexual activities, such as compulsive masturbation during early adolescence, or in the absence of methods of increasing self-esteem and mood, which creates a link between sex and emotional well-being (Cortoni & Marshall, 2001). The inability to manage mood states effectively can result in a lack of control, which, coupled with the presence of sexual stimuli, can promote an individual's disinhibition or use of sex to alleviate emotional and/or sexual needs.

The second set of clinical factors comprise an individual's social issues and emotional states, including loneliness, inadequacy, and low self-esteem among others. Deficits within this area are said to be a reflection of dysfunction in the motivational/emotional system of neuropsychological functioning and traditionally lead to problems in forming appropriate adult attachments (Ward, Hudson, & Marshall, 1996), which can often be categorized as dismissive, preoccupied, or disorganized attachments. Interestingly, attachment styles tend to be indicative of sex offending behaviors. For example, Ward et al. (1996) found that dismissive individuals typically demonstrate hostility towards others and are more likely to offend against adult women while preoccupied offenders seek approval from others and sexualize all relationships, making their primary targets children. Similarly, disorganized individuals use sexual offending as a strategy in response to the negative emotional states that are experienced with externally based control (Burk & Burkhart, 2003).

The third set of clinical symptoms of the ITSO consists of offense-supportive cognitions. These cognitions, or cognitive distortions, are a direct result of problems within the perception and memory system and are believed to be formed early in one's

life. They are described as sets of schemas that are utilized by individuals to interpret

social situations, and are thus known as implicit theories because they are part of the

process whereby offenders explain and interpret the actions of others (Ward & Keenan,

1999). Examples of cognitive distortions can include an offender's belief that a child is a

sexual being (Ward & Keenan, 1999) or that women seek to deceive men about what they

really want (Polaschek & Ward, 2002).

The final set of clinical symptoms included within the ITSO is related to deviant

arousal and behaviors. The exhibition of such behaviors is thought to be a product of

deviant sexual preferences, commonly known as paraphilias, and are believed to become

ingrained prior to the actual occurrence of the sexual offense (Abel, Becker,

Cunningham-Rathner, Mittelman, Murphy, & Rouleau, 1987; Marshall, Barbaree, &

Eccles, 1991). They may include recurrent and intense sexual fantasies and urges that

occur around children or non-consenting adults, at times of suffering and the humiliation

of oneself or others, or around non-human objects (American Psychiatric Association,

2000). Thus, paraphilias are thought to lead to deviant sexual arousal, which in turn leads

to sexual offending. Ward and Beech believe that sexual deviancy arises out of problems

within one's neuropsychological functioning, and is a result of the interaction of all three

processes of the motivational/emotional system, the action selection and control system,

and the perception and memory system. They write:

> …The inability to manage attachment issues and mood problems effectively
> (problems in the motivational/emotional system), in the presence of dysfunctional
> schemas/implicit theories (problems in the perception and memory system), may
> lead to the occurrence of deviant sexual fantasies and sexual preoccupation.
> These problems, coupled with a failure to regulate sexual desire (a basic
> physiological drive - motivational/emotional system), might lead an individual to
> use sex to meet emotional and sexual needs. (p. 30)

Maintenance and escalation of sexual actions. Clinical factors ostensibly lead to the sexual offense act under the ITSO. Once the act has been committed, however, the ITSO asserts that the consequences of the act can further establish or worsen the personal circumstances of the offender, which maintains such offending behavior or makes it stronger. The feedback loop, as displayed in Figure 2, begins at this critical point, and the maintenance and/or escalation of the sex offending behaviors is largely dependent on the offender's ecological niche: social and cultural factors, as well as the physical environment, interact with the offender's personal characteristics to create situations that support or discourage deviant sexual behaviors. An illustration of this process, according to Ward and Beech, is a male with a weak genetic predisposition toward sexual deviancy who lives in a culture where females are not valued or are generally without power. This male may be more likely to develop pro-rape attitudes, which not only contribute to the likelihood of a sex offense, but also serve to reinforce these actions after-the-fact.

Theory conclusion. The progression of events, according to the ITSO, is as follows. Through natural brain development and social learning, problematic biological and ecological factors lead to changes in neuropsychological functioning, which create clinical symptoms that directly lead to a sex offense action. This behavior may be maintained and thus escalate, leading to the perpetration of additional sex crimes.

The ITSO has been described as building on Finkelhor's (1984) Precondition Model and Marshall and Barbaree's (1990) integrated theory; Finkelhor's four preconditions are essentially the ITSO's neuropsychological functioning component, while Marshall and Barbaree's theory is incorporated into the biological and ecological components (Thakker & Ward, 2012). Overall, the theory represents a significant

achievement in the etiological literature due to the inclusiveness of the variables and factors that precipitate sexual offending as well as its ability to explain numerous types of sexual offenses. It is, essentially, a clear representation of a framework that mixes and integrates many individual theories of sexual deviancy. As noted by Thakker and Ward (2012), the theory thus allows for multiple pathways to offending as it assumes that sex offenders have different "developmental trajectories" (p. 240) that lead to sexual offending actions. But perhaps what is most notable about the ITSO is its alleged ability to explain both the initiation and reoccurrence of sex offenses. This is an extremely important distinction from prior integrative theories and a feature that can prove useful for the management of sexual abuse at all ends of the criminal justice system including prevention, sex offender treatment, and community management post-release.

Thakker and Ward's integrated theory of sexual reoffending. Using the ITSO as a framework, Thakker & Ward (2012) adopted Ward and Beech's model to further identify the variables that encompass the clinical factors. Specifically, their intention was to discern those factors that are most likely to maintain sexual offending, thus exploring components that are directly involved in recidivism. After a review of the literature, they chose five factors to include in a revised model of the ITSO: general antisociality, deviant sexual arousal, pro-offending attitudes and beliefs, intimacy deficits, and self-regulation problems. A description of each clinical factor and pertinent research follows.

General antisociality. Thakker and Ward chose general antisociality as a clinical factor in the revised model given the relationship that has been found between antisociality and sexual reoffending within the literature. Hanson and Morton-Bourgon (2005) define an antisocial orientation as marked by traits such as impulsivity,

unemployment, and substance abuse, as well as general rule breaking. They posit that an

antisocial orientation facilitates sex offending because these individuals will not commit

a sex crime unless they are willing to hurt others, are able to convince themselves that

victims are not being harmed, or feel unable to control their actions. Although some

groups of sex offenders are more likely to have an antisocial orientation than others (e.g.

rapists [Firestone, Bradford, Greenberg, & Serran, 2000]), such attitudes are

characteristic of most sex offenders generally. In their meta-analysis of 82 studies that

explored sexual recidivism, Hanson and Morton-Bourgon (2005) found that antisocial

orientation was among the strongest predictors of sexual recidivism. This finding

supports that of an earlier meta-analysis which also found antisocial personality to be

related to sexual recidivism (Hanson & Bussière, 1998). Antisocial orientation was also

found to be predictive of non-sex recidivism (Hanson & Morton-Bourgon, 2005),

including violent recidivism and any recidivism overall, providing evidence that sex

offenders share general antisocial characteristics with those of non-sex offenders (see

Gendreau, Little, & Goggin [1996] for a review of the correlates of general recidivism).

It is no surprise then that other researchers have utilized differing definitions to measure

general antisociality in sexual offenders and have found significant results, including any

prior burglaries or non-sexual assaults (Roberts, Doren, & Thornton, 2002) or prison

terms and parole violations (Sreenivasan et al., 2007).

　　　Deviant sexual arousal. Along with antisociality, researchers have found that

deviant sexual arousal or interests are associated with many elements of a sexual offense.

Deviant sexual interests can include the targeting of certain victims (e.g., young, age-

inappropriate victims), the committing of certain crimes (e.g. rape), the presence of

paraphilia (including sexual preoccupations and gender dysphoria), or use of force, among others. Researchers have measured deviant sexual interests using a variety of measures, including stranger victimization, male child victims, young victims generally, and use of force in the commission of the sex crime (Barbaree & Marshall, 1989; Freund & Watson, 1991; Quinsey, 1984, 1986). Other measures include the presence of noncontact sexual offenses (Roberts et al., 2002) or multiple victim types (Sreenivasan et al., 2007). Hanson & Bussière (1998) found sexual deviancy measures to be the strongest predictors of sexual recidivism among 61 studies (as measured by sexual interest in children), and Hanson and Morton-Bourgon (2005) found similar results. Unlike general antisociality, sexual deviancy has been found to be unrelated to other recidivism outcomes, including violent recidivism and non-sex recidivism generally (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). Interestingly, despite the relationship found between deviant sexual arousal and recidivism within the literature, sex offenders typically deny recurrent deviant sexual interests or behavior (Kennedy & Grubin, 1992; Langevin, 1988). Nonetheless, the strength of this variable's relationship with sexual reoffending, even more than antisocial orientation, reinforces Thakker and Ward's inclusion of the variable in their framework.

  Pro-offending attitudes and beliefs. The third factor to be included in Thakker and Ward's revised model for reoffending is pro-offending attitudes and beliefs. Pro-offending attitudes and beliefs are the cognitive distortions that are resultant of the malfunctioning of the perception and memory system, as noted in Ward and Beech's ITSO. They can be defined as beliefs that justify or condone sexual offending behaviors. Cognitive distortions are found to be related to sexual reoffending when they include

offender tolerance to sexual crimes (Cortoni, 2009) or offender beliefs of entitlement and justification of the sex crime (Hanson & Harris, 2000). Often times, the latter is deemed as denial/minimization of the crime, in which denial represents claims of innocence and minimization as attempts to downplay responsibility of the crime or lessen victim harm. Denial/minimization as it relates to sexual recidivism is debated. Researchers have discovered that higher levels of offense minimization can predict sexual recidivism among high-risk sexual offenders when other factors (including treatment completion status and psychopathy) are statistically controlled for (Langton et al., 2008). In contrast, meta-analyses have concluded that denial/minimization of crimes do not predict recidivism (Hanson and Bussière, 1998; Hanson & Morton-Bourgon, 2005), though the findings from these evaluations have been questioned given the differing definitions of denial/minimization found within empirical work in the field (see Lund, 2000). Further, it has been noted that denial may be an irrelevant aggravating risk factor for sexual recidivism for higher-risk offenders because reoffending may be a function of larger variables, such as psychopathy and deviant lifestyle (Lund, 2000).

Despite such ambiguity with denial/minimization in particular, researchers have discovered that pro-offending attitudes and beliefs as a construct do relate to sexual recidivism. Hanson and Morton-Bourgon (2005) defined pro-offending attitudes and beliefs as attitudes tolerant of sexual assault, which can be described as sexual attitudes or feelings that are tolerant of sex crimes and/or adult/child sexual relations. Though this measure was found to be weakly associated with sexual recidivism, it still bears consideration in the maintenance of sexual behaviors.

Intimacy deficits. The clinical factor of intimacy deficits, according to Thakker and Ward, is related to the way in which sex offenders interact with others, specifically those persons with whom an intimate relationship may occur. Their inclusion of this specific factor in their model is largely based on prior research that has concluded intimacy deficits are associated with sexual offending generally (Marshall, 1989) and reoffending specifically (Cortoni, 2009; Hanson & Morton-Bourgon, 2005). For example, it has been found that sexual reoffending is more likely in offenders who have problematic intimate relationships or who have no intimate relationships at all (Hanson & Harris, 2000; Mann, Hanson, & Thornton, 2010). The term intimacy deficits may also include inappropriate feelings of intimacy; for example, an adult sex offender who identifies and feels more comfortable with children or who expresses feelings of being in love with their child victims (Mann et al., 2010). Researchers in the field have also found that a proclivity to connect emotionally with children increases a child sex offender's likelihood for recidivism (Knight & Thornton, 2007).

Self-regulation deficits. The final set of clinical factors in Thakker and Ward's revised model for reoffending is deficits in self-regulation. They define self-regulation according to Cortoni's (2009) description, which refers to the offender's ability to self-monitor and "inhibit impulsive, irresponsible and rule-breaking decisions" (p. 47; as cited in Thakker & Ward, 2012). This trait is often linked with antisociality, and researchers have found that offenders overall (i.e., including non-sex offenders) who possess antisocial tendencies often have problems with self-regulation and impulsivity (Andrews & Bonta, 2003). This component's role in sexual recidivism has been assessed, and significant relationships have been found between reoffending and self-regulation

problems (Hanson & Morton-Bourgon, 2005) as well as impulsiveness (Mann et al.,

2010).

Figure 3. Thakker and Ward's (2012) Integrative Model of Sexual Reoffending
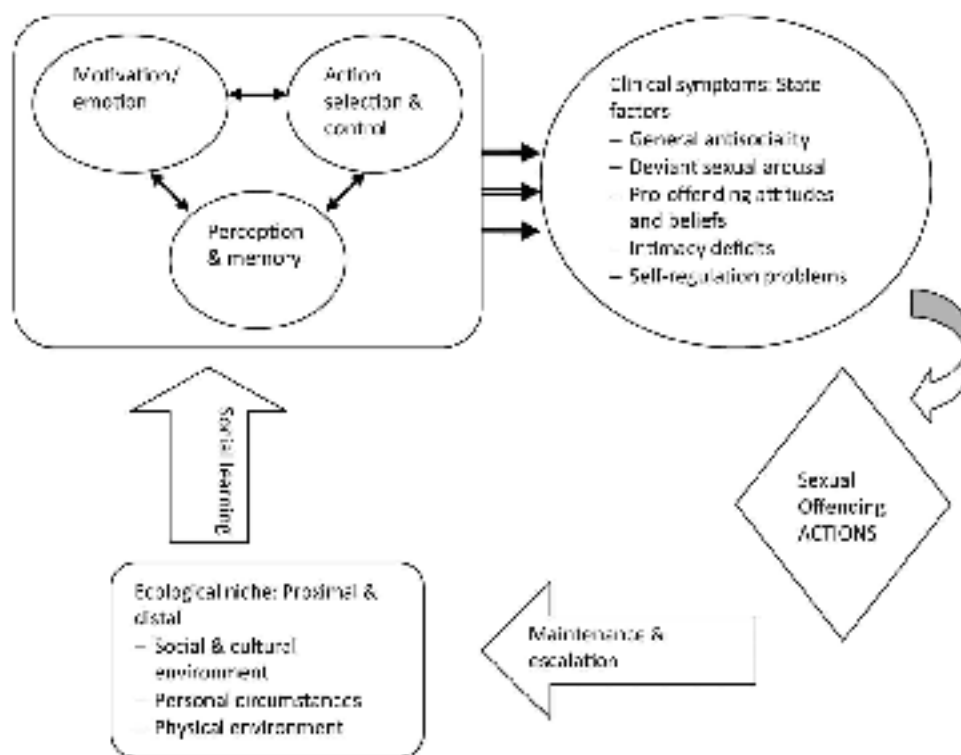
Theory overview. Thakker & Ward's revised variation of the ITSO for

reoffending with the inclusion of the aforementioned clinical factors can be viewed in

Figure 3. Specifically, the clinical factors can be viewed in the top right corner of the

model. The authors hypothesize that once a sex offense has been committed, the

presence of one or more of these clinical factors will increase the offender's likelihood to

reoffend. As the revised figure shows, the clinical symptoms lead to the sex offense

behavior, which gets maintained (and potentially escalated) by the offender's ecological

environment, leading to changes in neuropsychological functioning that also serve to

increase the likelihood for reoffense. Essentially, the sex offense itself interacts with all

of the processes that served to initiate it, strengthening the behavior and making a

reoffense more likely. For example, it is noted that if an offender believes that children enjoy engaging in sexual activities with an adult (i.e., pro-offending attitudes and beliefs), and then interprets the child's behavior according to this belief, the sexual deviancy after-the-fact is strengthened. Thus, with every additional sex offense that occurs, the malfunctioning processes become stronger. It should be acknowledged that the biological inheritance and brain development processes that are found within Ward & Beech's (2008) ITSO model have been removed, as it is hypothesized that they do not maintain or escalate sexual deviancy for future offending after a sexual offense has been committed.

Literature Review Conclusion

The present study will explore the ability of an integrative framework to predict initial sex offending, as well as sexual and non-sexual recidivism, using the ITSO and the integrated theory of sexual reoffending as guides. These two theories have been chosen over Finkelhor's (1984) Precondition Model and Marshall and Barbaree's (1990) integrated theory of sex offending given the theories' expansive range of factors involved in the initiation of sexual deviancy and its maintenance. This is not to say that the Precondition Model and Marshall and Barbaree's integrated theory should be entirely dismissed as inferior, as both theories made a substantial contribution to the field. However, given societal views of sex offenders as particularly heinous and recidivist criminals, and the seriousness with which a sex conviction carries (e.g., registration/notification provisions, community supervision for life, residency restrictions), it is important to explore theories and frameworks that relate to recidivism. It is also important to study sexual and non-sexual recidivism among sex offenders given

that rates of reoffending, comparatively speaking, are much lower for sex crimes than non-sex crimes (i.e., nearly 13% for sex crimes versus approximately 36% for non-sex crimes [Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005]), though explanations for this disparity are rare.

Additionally important, the findings of empirical studies that explore the etiology and maintenance of sexually deviant behaviors that violate criminal codes provide for much ambiguity and discussion. It is essential that such issues be clarified to further aid treatment objectives and preventive measures in combating sexual abuse and reoffending. As noted previously, the role of pro-offending attitudes and beliefs in recidivism, particularly in terms of denial/minimization of offenses, is debated. But there are also a number of other elements of sex offending etiology that need further clarification. For example, in the ITSO, ecological niche factors are one component within the chain reaction leading to sexual offending behavior. Experiences encountered during childhood, including sexual abuse, are theorized to alter neuropsychological functioning, eventually leading to a sexual offending action. But the validity of the association between offender child sexual abuse and later adult sexual offending is uncertain. Although some researchers have found that sex offenders present with significantly higher rates of childhood sexual abuse than nonsexual offenders (e.g. Jespersen, Lalumière, & Seto, 2009; Whitaker et al., 2008), thus indicating a relationship between childhood sexual abuse victimization and adult sexual offending, some researchers have found no relationship between childhood sexual abuse and sexual recidivism (Hanson & Bussière, 1998; Nunes, Hermann, Malcolm, & Lavoie, 2013) nor a relationship between adverse childhood environment (which includes childhood sexual abuse) and recidivism

(Hanson & Morton-Bourgon, 2005). These findings are surprising and may provide evidence that different processes are at work for the initiation of sexual behaviors and their maintenance. Further exploration is necessary.

CHAPTER 3

Problem Statement and Research Questions

The aforementioned theories of sexual offending, as well as integrative etiological theories of sex offending more generally, have received little to no empirical testing. The present study thus adds to the literature by testing elements of Ward and Beech's (2008) ITSO and Thakker and Ward's (2012) integrated theory of sex reoffending (herein referred to as ITSR) using a sample of adult male sex offenders released from New Jersey correctional facilities. Specifically, the proposed study seeks to identify the predictors of initial sexual offending, reoffending, and general recidivism, as well as the pathways between factors and outcomes, in a sample of sex offenders commonly found within state criminal justice systems.

Although there are countless studies that explore factors related to sexual offending and reoffending, few studies have tested the direct and indirect relationships between such factors and their prediction of offending outcomes. This study will therefore be among the first to specifically test such models. The present study also represents an initial empirical test of any integrative theory of sexual offending that includes a sexual reoffending outcome. Finally, given that sex offenders are a diverse population, with different motivations, risk levels, and treatment needs (Boer et al., 1997; Prentky & Knight, 1991; Prentky, Knight, & Lee, 1997; Saleh & Guidry, 2003), the present sampling frame is heterogeneous in that it includes a sample of all sex offenders released from correctional facilities within a 10-year time frame. No two offenders in the sample are alike; different environmental, psychological, and criminal profiles (among others) are represented.

The present study will also test the ability of integrative frameworks to predict general reoffending among sex offenders. Researchers have noted that the factors predictive of sexual recidivism are similar to those that are predictive of non-sexual recidivism (Hanson & Morton-Bourgon, 2005). A test of the predictive accuracy of integrative frameworks in determining the risk of non-sex recidivism within this population is thus of interest, and the results can provide clarity to our understanding of the differences between sex offending and non-sex offending and sex offenders and general offenders.

As described more in depth in Chapter 4, structural equation modeling (SEM) will be utilized to test three models. The first model (herein Model 1) is based on the ITSO and will assess the impact of offender characteristics on the prediction of an initial sex offense (i.e., the sex offense that inevitably led to the offender's conviction, incarceration, and subsequent inclusion in the sample). This model will also test the pathways between these characteristics and the outcome to determine if they exist as assumed. Specifically, it is hypothesized that three latent factors, consisting of variables related to offender ecological, neuropsychological, and clinical characteristics, have the ability to predict the type of initial sex offense of conviction. Each latent factor is hypothesized to predict the outcome either directly or indirectly. Research questions for Model 1 and their attendant hypotheses are as follows:

Research Question 1A: *Are three factors, composed of offender ecological, neuropsychological, and clinical characteristics, suitable to predict the type of initial sex offense of conviction within the current sample?*

Hypothesis 1A: It is hypothesized that three latent factors relating to offender ecological, neuropsychological, and clinical characteristics will adequately predict the type of initial sex offense of conviction within the current sample.

Research Question 1B: *Do Model 1's proposed pathways for initial sex offending fit the current data? That is, do ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, leading to a prediction of the initial sex offense? Additionally, do all latent factors have a direct influence on the initial sex offense outcome?*

Hypothesis 1B: It is hypothesized that Model 1's proposed pathways for initial sex offending fit the current data. That is, ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, in the prediction of the initial sex offense. It is also hypothesized that each latent factor has a direct influence on the outcome.

The second model (herein Model 2), as guided by the ITSR, will assess the impact of offender characteristics and aspects of the initial sex offense on the prediction of sexual reoffense. This model will also test the pathways between these characteristics and the outcome. Specifically, it is hypothesized that four latent factors, consisting of variables related to offender ecological, neuropsychological, and clinical characteristics, as well as aspects of the initial sex offense, predict the likelihood for a sexual reoffense. Each of these four latent factors is hypothesized to predict the outcome either directly or indirectly.

Research Question 2A: *Are four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, suitable to predict a sexual reoffense within the current sample?*

Hypothesis 2A: It is hypothesized that four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, are suitable to predict a sexual reoffense within the current sample.

Research Question 2B: *Do Model 2's proposed pathways for sexual recidivism fit the current data? That is, do ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms and the initial sex offense, to predict sexual recidivism? Additionally, do all latent factors have a direct influence on the initial sex offense factor and the sexual reoffense outcome?*

Hypothesis 2B: It is hypothesized that the pathways described in Model 2 for sexual recidivism fit the current data. That is, ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, followed by the initial sex offense, to predict a sexual reoffense. It is also hypothesized that each latent factor has a direct influence on the initial sex offense factor and the sexual reoffense outcome.

Finally, the third model (Model 3) will extend the variables utilized within Model 2 to determine if similar factors and processes can be useful in the prediction of non-sex offending outcomes. Research questions for Model 3 and their attendant hypotheses are the following:

Research Question 3A: *Are four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, also suitable to predict a non-sex reoffense within the current sample?*

Hypothesis 3A: It is hypothesized that four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, are suitable to predict a non-sex reoffense within the current sample.

Research Question 3B: *Do Model 3's proposed pathways for non-sex recidivism fit the current data? That is, do ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms and the initial sex offense, to predict non-sex recidivism? Additionally, do all latent factors have a direct influence on the initial sex offense factor and the non-sex recidivism outcome?*

Hypothesis 3B: It is hypothesized that the pathways described in Model 3 for non-sex recidivism fit the current data. That is, ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, followed by the initial sex offense, to predict a non-sex reoffense. It is also hypothesized that each latent factor has a direct influence on the initial sex offense factor and the non-sex recidivism outcome.

Path Diagrams

The path diagrams displayed in Figures 4, 5, and 6 illustrate the *a priori* set of relationships between variables. Observed variables, or indicators, are represented by squares or rectangles. Latent variables, or factors, include two or more indicators and are represented by ovals. Lines are indicative of a hypothesized relationship between two variables or factors; thus, the absence of a line implies no direct relationship between two

variables has been hypothesized. Lines with one arrow represent the hypothesis of a direct relationship between two variables, and the variable with the arrow pointing to it represents the regression of that parameter on the former. These variables may also be specifically described using exogenous or endogenous titles. Exogenous variables are variables in which the cause of said parameter remains unexplained within the model (that is, there are no arrows pointing to the variable, but rather, only pointing out). In comparison, endogenous variables are those parameters that are the effects of other variables within the model (i.e., there is an arrow pointing to the variable).

Figure 4. *A Priori* **Model 1 Predicting Initial Sex Offense Type**
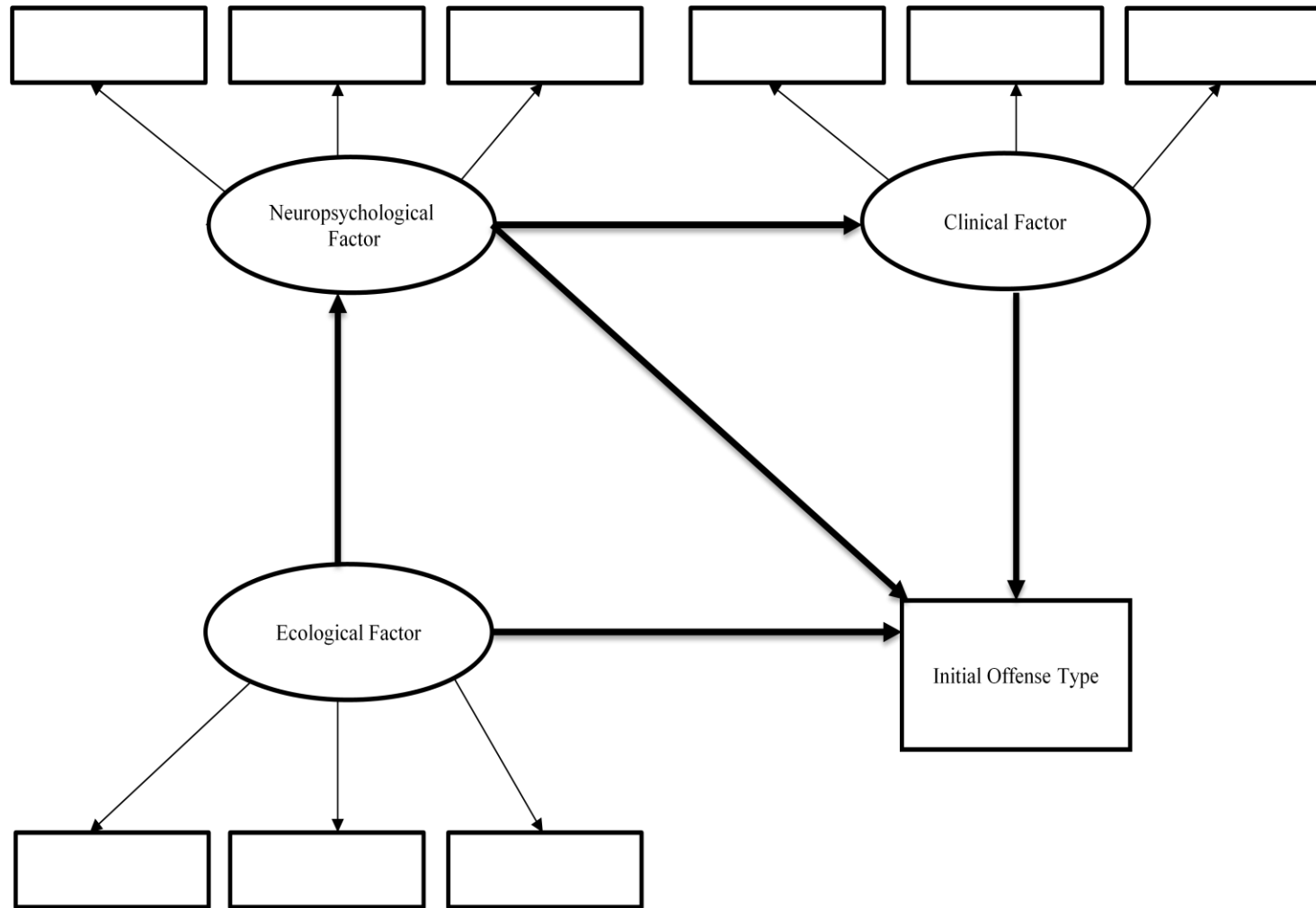
Note. The components of each proposed latent variable are dependent on the results of the exploratory factor analysis (to be described in Chapter 4). This diagram is for illustrative purposes only. Thin lines represent the *a priori* measurement model, while thick lines represent the *a priori* structural model.

Figure 5. *A Priori* Model 2 Predicting Sex Recidivism
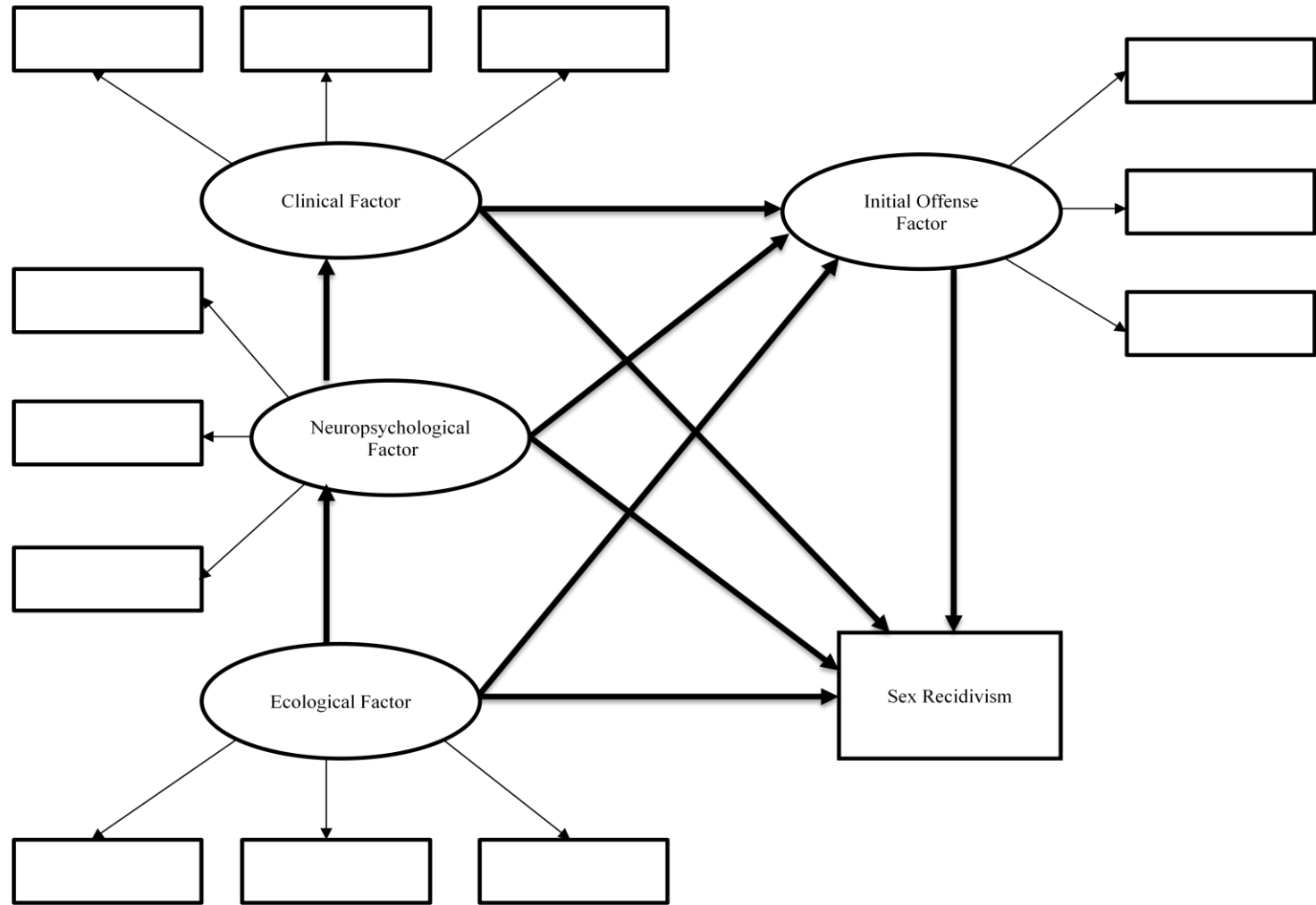
Note. The components of each proposed latent variable are dependent on the results of the exploratory factor analysis (to be described in Chapter 4). This diagram is for illustrative purposes only. Thin lines represent the *a priori* measurement model, while thick lines represent the *a priori* structural model.

Figure 6. *A Priori* Model 3 Predicting Non-sex Recidivism
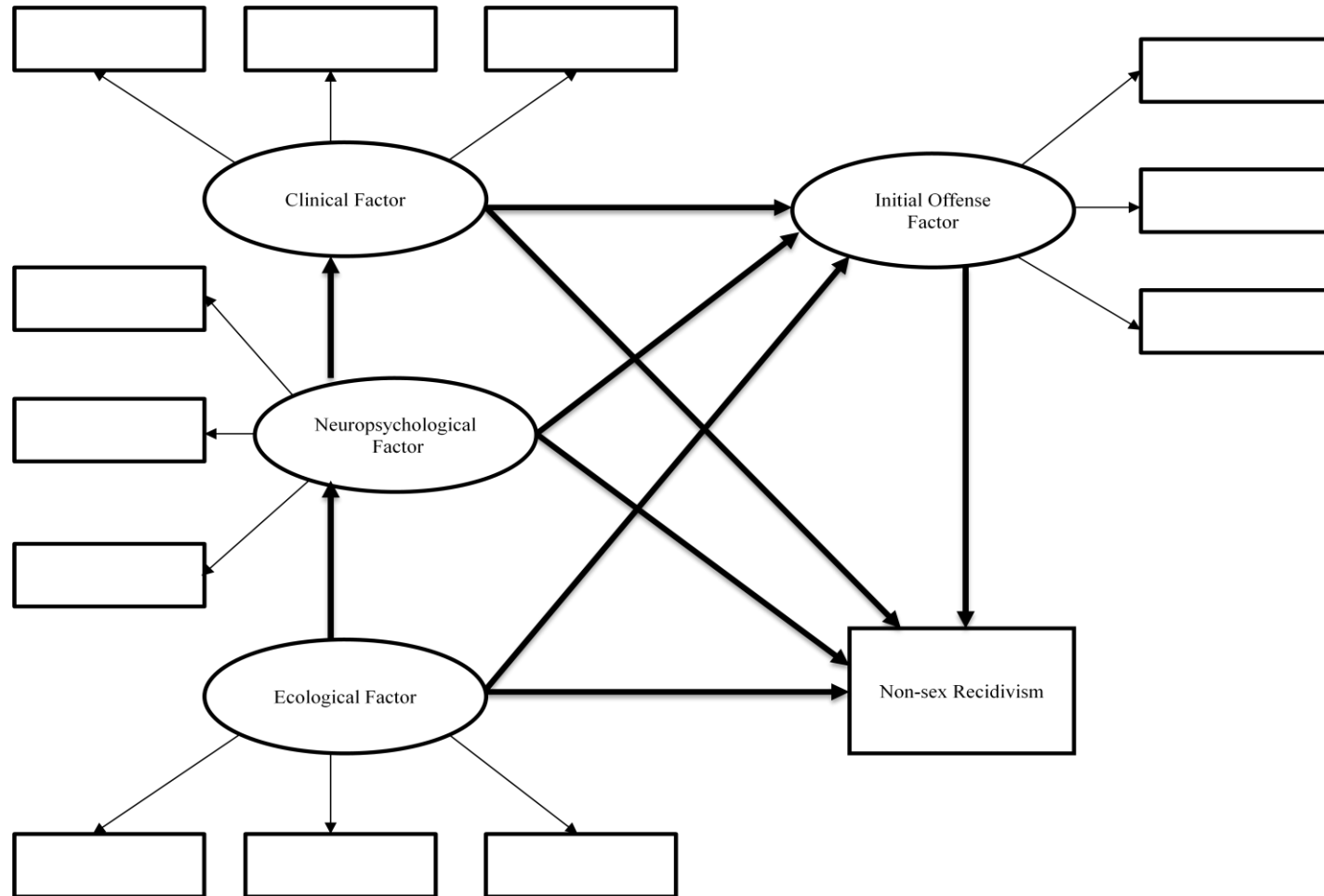
Note. The components of each proposed latent variable are dependent on the results of the exploratory factor analysis (to be described in Chapter 4). This diagram is for illustrative purposes only. Thin lines represent the *a priori* measurement model, while thick lines represent the *a priori* structural model.

CHAPTER 4

Methodology

The proposed study includes secondary data analysis of a dataset that includes

clinical, institutional, demographic, criminal history, and recidivism information for a

sample of adult male sex offenders released in New Jersey between 1990 and 2000. This

chapter will describe the sample selection and data collection procedures. This chapter

will also provide an overview of the data analysis procedures.

Participants

Data used in the present study were previously collected for NIJ grant award

number 2006-IJ-CX-0018 (Zgoba, Witt, Dalessandro, & Veysey, 2008). The original

sample includes 550 male sex offenders released from New Jersey Department of

Corrections (NJDOC) facilities between the years of 1990 and 2000. Given that the

theories to be tested were conceived to account for male sex offending only, the present

sample includes only males. All sex offenders who were convicted of a prior sex offense

were removed from the sampling frame (n=87), providing a final sample of 463 male sex

offenders (N=463).

Data Sources and Collection

Under the grant, extensive demographic, clinical, institutional, treatment, criminal

history, and recidivism data were collected by the NJDOC. Demographic, clinical,

institutional, and treatment information were collected through a file review of existing

NJDOC records. Criminal history and recidivism information were collected from New

Jersey Computerized Criminal History (CCH) reports, as well as the Interstate

Identification Index (III). The CCH reports on all arrests, acquittals, convictions,

sentences, parole violations (PVs), and violations of probation (VOPs) that occur within

New Jersey, while the III reports on all arrests, acquittals, convictions, sentences, PVs,

VOPs, and outstanding warrants that occur nationally, and thus, outside of New Jersey.

Recidivism information was collected beginning from the date of an offender's release

from a correctional facility until June 15, 2007. The follow-up time period for recidivism

was standardized, ensuring that all subjects had an equal time at risk, specifically 2,358

days (approximately 6.5 years).[1] This follow-up period was retained for use within the

present analyses.

Measures

    Outcome measures. There are three outcome measures of interest within the

present study. The outcome variable for Model 1 is initial sex offense type. It is a

dichotomous categorical variable, coded as 0=child molestation, 1=rape. Child

molestation is defined as the force, coercion, or threatening of a victim under the age of

16 by the offender to engage in any form of sexual contact. This category does not

distinguish between inter- and intra-familial child sexual abuse, and all cases of sexual

abuse with victims under the age of 16 are included within the "child molestation"

designation. Rape is defined as the force, coercion, or threatening of a victim, aged 16

years or older, by the offender to engage in any form of sexual contact. This

categorization is also inclusive of both inter- and intra-familial rapes. This outcome

measure represents the type of first conviction on record for a sex offense (or, more

specifically, the sex offense that inevitably led to the offender's conviction, incarceration,

and subsequent inclusion in the sample). The second outcome measure of interest is sex

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[1] For more information on the data sources and collection, please review Zgoba, Witt, Dalessandro, and Veysey (2008).

recidivism, predicted in Model 2. This is a dichotomous categorical variable, coded as 0=no sex recidivism, 1=sex recidivism. It is specifically defined as the occurrence of an arrest for a new sex crime within the follow-up period. Finally, the third outcome measure of interest is non-sex recidivism, predicted in Model 3. Also a dichotomous categorical variable (0=no non-sex recidivism, 1= non-sex recidivism), it is defined as the occurrence of an arrest for any new non-sex crime within the follow-up period.

Latent factors. The latent factors included within each model will be created using exploratory factor analysis (EFA), the procedures of which will be described within the next section. The variables to be included within the EFAs for each model can be found in Table 1 along with their definitions and coding schema. These variables have been chosen based on researcher interest in their relationships with the outcome measures of study, hypothesized/known relationships with sexual offending outcomes as provided by Thakker and Ward's (2012) ITSR model and other sources, or ambiguity in the literature regarding their relationship with sex offending. Variables included due to researcher interest are: raised in a two-parent home up to age 13, family members involved in the criminal justice system, education level, and living status at time of the initial sex offense.[2] Variables incorporated due to presumed associations with sex offending outcomes include: age at time of release, marital status, number of years of employment, history of substance abuse, number of prior adult non-sex arrests, number of prior adult arrests for violent offenses, number of prior adult arrests for property offenses, number of prior adult arrests for drug offenses, juvenile non-sex offense on

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[2] It should be noted that some of these variables are considered related to criminality more generally, and are thus included within the present study for exploratory purposes. For example, family factors are related to recidivism (Gendreau et al., 1996) and the relationship between education and criminality is well documented (see Maguin and Loeber [1996] for a review).

record, stranger victimization, and victimization of males.[3] Finally, variables included

due to conflicting findings regarding associations with sexual offending outcomes

include: self-reported history of sexual abuse victimization, self-reported history of

physical abuse victimization, history of mental illness, history of mental health treatment,

sex offender treatment level[4] and denial/minimization of offenses.[5] It is presumed that

the observed variables included in Model 1 will load onto 3 factors pertaining to offender

ecological, neuropsychological, and clinical characteristics; for Models 2 and 3, it is

presumed that 4 factors will be extracted consisting of characteristics related to offender

ecological, neuropsychological, and clinical characteristics, as well as aspects of the

initial sex offense.

Data Analysis

Three procedures will be completed in the analysis of each model. These include

exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and structural

equation modeling (SEM). All three procedures will be completed with the aid of Mplus

version 6.11 software (Muthén & Muthén, 1998-2011) due to the presence of observed

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[3] Specifically, unemployment, substance abuse, and general rule breaking are associated with sex recidivism (Hanson & Morton-Bourgon, 2005), as are any prior burglaries or non-sexual assaults (Roberts, Doren, & Thornton, 2002). Deviant victim choices, such as males or stranger victims (Hanson & Bussière, 1998), as well as intimacy deficits (Hanson & Morton-Bourgon, 2005) are related to sexual recidivism. Age at release has also been found to have an inverse relationship with sexual recidivism risk (Hanson, 2002; Hanson & Bussière, 1998).

[4] Sex offenders serving time at the Adult Diagnostic and Treatment Center (ADTC), New Jersey's sex offender-specific prison, are entered into a five-step program. Level 1 offenders receive an orientation to treatment and acquire basic skills necessary to enter into Level 2 treatment. Level 2 offenders begin applying the skills learned in Level 1, with a focus on acknowledgment of responsibility and victim empathy. Level 3 offenders focus on mastery of information acquired in earlier levels, and relapse-prevention practices are introduced. Level 4 is focused on a more detailed relapse prevention plan and release preparation. Finally, offenders who reach Level 5 begin a maintenance program to aid in the management of earlier gains. They may also be placed in a therapeutic community within ADTC with additional responsibilities, including limited self-government (Zgoba, Sager, & Witt, 2003). All treatment is completed in a group setting.

[5] The relationship between treatment and recidivism is a complex one (see Hall [1995] for a review), and as noted within Chapter 2, the role of denial/minimization and abuse victimization among sex offenders is contested.

categorical variables within the analyses. Basic descriptives for the sample will be calculated using SPSS version 21 software.

      Exploratory factor analysis. Exploratory factor analysis will first be completed to generate the latent factors within each hypothesized model. Two sets of EFA will be completed: one for Model 1, which will create latent factors for the prediction of an initial sex offense, and one for Models 2 and 3, which will create latent factors for the prediction of a sex and non-sex reoffense, respectively.[6] Exploratory factor analysis is a statistical technique that is useful for identifying the clustering of variables to measure an underlying latent construct. For the purposes of the present study, EFA will be used to ascertain if the observed variables in Table 1 group themselves according to the *a priori* latent constructs of offender ecological, neuropsychological, clinical, and initial sex offense-related characteristics. Although the ITSO and ITSR hypothesize that certain factors are relevant to sexual offending and reoffending, an analysis of these variables has never been completed. Thus, such an exploration is necessary, and the use of EFA is warranted. Only observed factor loadings greater than .298 will be considered (Stevens, 1992); variables that do not contain factor loadings greater than .298 will be dropped from all future analyses for that model. The number of factors to be retained for each analysis will be determined based on a review of the results of the chi-square test of model fit and the Steiger-Lind root mean square error of approximation (RMSEA; Steiger, 1990). In EFA using Mplus, a non-significant chi-square test of model fit value indicates that the number of factors retained is sufficient to explain the intercorrelations among the observed variables (Institute for Digital Research and Education, n.d.). The

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[6] Provided that one aim of the study is to determine if the processes that predict non-sex recidivism are the same as those that predict sex recidivism, the same latent factors will be utilized when analyzing Models 2 and 3 in the EFA and initial CFA analyses.

RMSEA value is used to indicate a close approximate fit of the hypothesized model to the data; specifically, RMSEA values $\leq .05$ indicate close fit, values between .05 and .08 indicate moderate fit, and values $\geq .10$ indicate poor fit (Kline, 2005).

Confirmatory factor analysis. Based on the results of each set of EFA, CFA will be completed for Model 1 and Models 2 and 3 separately. While EFA and CFA are similar in that they are both techniques that aim to reduce a set of observed variables into a smaller quantity of latent factors, CFA differs from EFA in that the researcher sets the number of factors to be extracted. The factor structure is then evaluated based on its ability to successfully reproduce the relationships between the observed variables. In the present analysis, the number of factors set by the researcher to be extracted will be guided by the number of factors identified in the EFA for the models. Any indicators that are found to be unrelated to the proposed latent factor structure (i.e., $p > 0.05$) will be removed during model respecifications.

Table 1. Variables for Inclusion in Exploratory Factor Analyses, Related Labels and Values, and Outcome Measures

Variable	Abbreviated Variable Label	Description	Values	Hypothesized Model Inclusion
Raised in a two parent home up to age 13	Two Parent	Was offender raised in a traditional two parent home up to age 13?	0=no; 1=yes	1, 2, 3
Family members involved in criminal justice system	Family CJS	Did offender have family members involved in the criminal justice system?	0=no; 1=yes	1, 2, 3
Education level	Education	Offender education level	0=no HS degree; 1=HS degree or higher	1, 2, 3
Marital status	Marital Status	Was offender ever married?	0=never married; 1=married	1, 2, 3
Number of years of employment	Years Employed	Offender's number of years of employment prior to initial offense	None (Continuous)	1, 2, 3
History of sexual abuse victimization	Sex Abuse	Did the offender self-report a history of sexual abuse victimization?	0=no; 1=yes	1, 2, 3
History of physical abuse victimization	Physical Abuse	Did the offender self-report a history of physical abuse victimization?	0=no; 1=yes	1, 2, 3
History of mental illness	Mental Illness	Did offender have a history of mental illness on record?	0=no; 1=yes	1, 2, 3
History of mental health treatment	MH Treatment	Did offender have a history of mental health treatment on record?	0=no; 1=yes	1, 2, 3
History of substance abuse	Substance Abuse	Any history of drug or alcohol abuse on record?	0=no; 1=yes	1, 2, 3
Number of prior adult non-sex arrests	Prior Non-sex	Number of prior non-sex arrests	None (Continuous)	1, 2, 3
Number of prior adult arrests for violent offenses	Prior Violent	Number of prior violent offenses	None (Continuous)	1, 2, 3
Number of prior adult arrests for property offenses	Prior Property	Number of prior property offenses	None (Continuous)	1, 2, 3
Number of prior adult arrests for drug offenses	Prior Drug	Number of prior drug offenses	None (Continuous)	1, 2, 3
Juvenile non-sex offense on record	Juvenile Non-sex	Was offender ever charged with a non-sex offense as a juvenile?	0=no; 1=yes	1, 2, 3
Living status at time of initial offense	Living Status	Did offender live with anyone at time of initial offense?	0=no; 1=yes	2, 3

Variable	Abbreviated Variable Label	Description	Values	Hypothesized Model Inclusion
Treatment level completed in prison	Treatment Level	Highest sex offender treatment level completed while incarcerated for the initial sex offense	0=no treatment; 1=Level 1 Tx; 2=Level 2 Tx; 3=Level 3/Level 4 Tx	2, 3
Offender denial of initial offense	Denial	Did the offender fully deny involvement in the sex offense?	0=no denial; 1=partial denial; 2=full denial	2, 3
Age at release from prison	Release Age	Offender's age at release date	None (Continuous)	2, 3
Number of male victims	Male Victims	Number of male victims	None (Continuous)	2, 3
Stranger victim	Stranger Victims	Was the victim a stranger?	0=no; 1=yes	2, 3
Type of initial sex offense	**Initial Sex Offense Type**	**Initial offense recoded into child molestation vs. rape**	**0=child molestation; 1=rape**	**1**
Rearrest for sex offense	**Sex Recidivism**	**Did the offender have a sexual reoffense?**	**0=no; 1=yes**	**2**
Rearrest for non-sex offense	**Non-sex Recidivism**	**Did the offender have a non-sex reoffense?**	**0=no; 1=yes**	**3**

Note: Observed outcome variables are displayed in bold.

Values of zero on binary variables serve as reference categories in the analyses.

Structural equation modeling. The third and final step of the analysis includes the evaluation of the hypothesized causal relationships between the latent variables and the observed outcome variables utilizing SEM. Structural equation modeling is a theory-driven confirmatory technique in that it examines models that are conceptually derived and tests if the theory fits the available data. There are three basic processes that are at the core of any SEM analysis: path analysis, confirmatory factor analysis, and structural regression modeling. As a result, SEM is often utilized in place of simple regression modeling because it allows for multiple dependent variables, allows variables to correlate, and accounts for measurement error. Thus, SEM has been chosen over other advanced statistical techniques as it offers a more methodologically rigorous way to examine the accuracy and overall quality of proposed models (Gau, 2010). Additionally, SEM allows for the testing of the relationships between variables including a combination of direct effects and indirect effects among others (James, Mulaik, & Brett, 1982), thus making it a good fit for the research questions that are being explored.

Due to its complexity, a successful SEM analysis involves numerous steps. First, the model to be analyzed must be specified. In other words, the research hypotheses must be transformed into the form of a structural equation model, or a series of equations. These equations define the proposed model's parameters, or presumed relations among the variables, which are eventually estimated within the data. Second, the model undergoes model identification, or the process in which the unknown parameters within the model (i.e., the factor loadings and path coefficients) are estimated based upon the known parameters. After the model has been identified, model estimation may occur, which includes the interpretation of the parameter estimates. Finally, based on the

findings of the model estimation, the model may be respecified and reanalyzed; for example, dependent or independent variables may be excluded, or pathways may be altered to improve overall model fit. While this step is not essential, it is often recommended that the researcher modify the hypothesized model and evaluate the fit of the revised model to the same data. Kline (2005) suggests that respecification be guided by the researcher's hypotheses, similar to the original model.

These steps will be completed in the present study. Model fit will be determined using the chi-square test of model fit and the RMSEA value. Effect size interpretation of standardized path coefficients will occur as follows: absolute values of less than 0.10 indicate a small effect, absolute values of 0.30 indicate a moderate effect, and absolute values of 0.50 and above indicate a large effect (Cohen, 1988). If fit indicators suggest a poor fitting model, and/or if model estimation returns non-significant path coefficients between factors and the observed variables (i.e., $p > 0.05$), the model will be respecified and reanalyzed. The overall sample size included within each estimated model will be taken into consideration and documented where appropriate. As larger sampling frames provide for less sampling error, it is recommended that the ratio of the number of cases to the number of free parameters in the tested model be at least 10:1 (Kline, 2005).

CHAPTER 5

Results

Sample Descriptives

Table 2 displays demographic information for the sex offenders in the sample.

The offenders were predominately white (48.3%), followed by black (35.1%) and

Hispanic (16.5%). Most offenders were raised in a two-parent home up to age 13 (64%),

and 7.1% had family members involved in the criminal justice system. Nearly 25% of

the total sample self-reported a history of sexual abuse victimization as a child while 10%

self-reported a history of physical abuse victimization. At the time of the initial sex

offense, a little more than half of all offenders had a high school diploma or higher

education level. Additionally, nearly 52% were single (i.e., never married), and 88.6%

were living with someone. The majority of offenders had an employment history prior to

the initial sex offense (62.4%), and the mean number of years of employment was 5.12;

most reported offender income levels fell below $20,000 annually. Approximately 20%

of the sample had a history of mental illness on record, and 30.3% received treatment for

a mental health issue prior to the initial sex offense. A history of drug and/or alcohol

abuse was recorded for nearly half of the sample. Ninety two (19.9%) offenders

committed a non-sex offense as a juvenile, while only 9 (1.9%) committed a sex offense.

A review of the offenders' adult criminal histories revealed that the average

number of arrests for a non-sex offense prior to the initial sex offense was 3.49;

offenders, on average, had 2.01 convictions and 0.65 incarceration stays. The mean

number of prior arrests for a property crime was 1.14, followed by violent (M=0.49) and

drug (M=0.48) offenses. The average number of arrests for a sex offense prior to the

initial sex offense in this study was 0.11.

The predominant initial sex offense within the present sample was child

molestation (including inter-familial child abuse; 79.7%); rape was committed by

approximately 20% of the sample. Victims tended to be female (84%), followed by male

(13.6%), and 2.4% of offenders had both male and female victims. Offenders tended to

be well acquainted with their victims (85% were familial or acquaintance relationships

while only 15% were stranger relationships). Drugs and alcohol were involved in the

commission of some of the initial offenses (14.3% and 26.3%, respectively), as was force

marked by the presence of a weapon (12.6% of initial offenses). The majority of

offenders denied their involvement in the sex crime, either partially or fully. One

hundred eighty-eight offenders (41.9%) completed sex offender treatment while

incarcerated, and the highest level of completion among these offenders tended to be

Level 2. The average amount of time served was 53.09 months (i.e., 4.24 years), and

offenders were, on average, 38 years of age upon release from prison for the initial sex

crime. Most offenders were released on unconditional release status (65.4% vs. 34.6%).

The recidivism of the sample was assessed during the 6.5-year follow-up period.

While only 46 offenders recidivated with a sex crime (9.9%), a little more than half of the

sample was rearrested for a non-sex crime (52.3%).

Table 2. Sample Descriptives

Variable	Percent (n)	Mean (SD)	n
Race			
Black	35.1 (162)		
White	48.3 (223)		462
Hispanic	16.5 (76)		
Other	0.2 (1)		
Raised in a two parent home up to age 13			
Yes	64.0 (286)		447
No	36.0 (161)		
Family members involved in criminal justice system			
Yes	7.1 (37)		455
No	91.9 (418)		
Self-reported history of sexual abuse victimization			
Yes	24.8 (115)		463
No	75.2 (348)		
Self-reported history of physical abuse victimization			
Yes	9.7 (45)		463
No	90.3 (418)		
Education Level			
Some high school or below	48.1 (222)		
High school diploma/GED	35.2 (162)		461
Some college	13.5 (62)		
College graduate or higher	3.3 (15)		
Marital Status			
Never married	51.5 (237)		
Married	40.5 (186)		460
Divorced	7.8 (36)		
Widowed	0.2 (1)		
Living status at time of initial offense			
Living with someone	88.6 (406)		458
Living alone	11.4 (52)		
Employment History			
Yes	62.4 (284)		455
No	37.6 (171)		
Number of years of employment		5.12 (7.46)	436
Employment income			
$20,000 or less	68.9 (111)		
$21,000 to $30,000	15.5 (25)		
$31,000 to $40,000	10.6 (17)		161
$41,000 to $50,000	3.1 (5)		
$51,000 or higher	1.9 (3)		
History of mental illness			
Yes	20.5 (94)		459
No	79.5 (365)		
History of mental health treatment			
Yes	30.3 (139)		458
No	69.7 (319)		
History of drug abuse			
Yes	47.1 (218)		463
No	52.9 (245)		
History of alcohol abuse			
Yes	46.1 (213)		462
No	53.9 (249)		

Variable	Percent (n)	Mean (SD)	n
Juvenile non-sex offense on record			
Yes	19.9 (92)		462
No	80.1 (370)		
Juvenile sex offense on record			
Yes	1.9 (9)		463
No	98.1 (454)		
Number of prior adult non-sex arrests		3.49 (5.82)	463
Number of prior adult non-sex convictions		2.01 (3.45)	461
Number of prior adult non-sex incarcerations		0.65 (1.82)	462
Number of prior adult arrests for violent offenses		0.49 (1.09)	461
Number of prior adult arrests for property offenses		1.14 (2.61)	462
Number of prior adult arrests for drug offenses		0.48 (1.24)	462
Number of prior adult sex arrests		0.11 (.36)	463
Type of initial sex offense			
Child molestation	79.7 (369)		463
Rape	20.3 (94)		
Gender of victim(s)			
Male	13.6 (63)		
Female	84.0 (389)		463
Both	2.4 (11)		
Relationship to victim			
Family	52.6 (243)		
Acquaintance	32.7 (151)		462
Stranger	14.7 (68)		
Drugs involved in initial offense			
Yes	14.3 (65)		453
No	85.7 (388)		
Alcohol involved in initial offense			
Yes	26.3 (119)		453
No	73.7 (334)		
Use of weapon in initial offense			
Yes	12.6 (58)		460
No	87.4 (402)		
Offender denial of initial offense			
No denial	37.3 (161)		
Partial denial	21.5 (93)		432
Full denial	41.2 (178)		
Treatment level completed in prison			
None	58.0 (253)		
Level 1	13.1 (57)		436
Level 2	26.8 (117)		
Level 3 or above	2.0 (9)		
Time served (months)		53.09 (39.32)	462
Age at release from prison		37.99 (11.84)	463
Type of Release			
Conditional release	34.6 (160)		
Unconditional release	65.4 (303)		
Rearrest for sex offense			
Yes	9.9 (46)		463
No	90.1 (417)		
Rearrest for non-sex offense			
Yes	52.3 (242)		463
No	47.7 (221)		

Note: Percentage totals may not add up to 100 due to decimal rounding.
Persons with no employment history on record are excluded from the employment income variable.

Model 1

  Exploratory factor analysis. The EFA for Model 1 included the 15 observed

variables as noted within Table 1. Weighted least-squares estimation with mean and

variance adjustment was chosen over other estimation methods as it has been deemed an

optimal choice for analyses with categorical outcomes (Muthén, du Toit, and Spisic,

1997). Varimax rotation was utilized to maximize factor loadings onto one factor for

ease of interpretation.

  The output of up to and including 5 factors to sufficiently explain the

intercorrelations between the 15 observed variables was assessed. Exploratory factor

analysis with only 1 factor returned a significant chi-square test of model fit

(χ^2_M=654.90, df$_M$=90, p=0.00). Significant chi-square tests of model fit were also

present for 2 factors (χ^2_M=310.33, df$_M$=76, p=0.00) and 3 factors (χ^2_M=136.27, df$_M$=63,

p=0.00), respectively. However, RMSEA values decreased between 1 and 3 factors (i.e.,

1 Factor RMSEA=0.12; 2 factor RMSEA=0.08; 3 factor RMSEA=0.05), indicating

improved fit with increasing factor extractions. The chi-square test of model fit for 4

factors was again significant (χ^2_M=96.55, df$_M$=51, p=0.00), though the extraction of four

factors was deemed to be the best fit to the data provided that the RMSEA value obtained

was 0.04 and a test of 5 factors could not be completed due to a severe Heywood case.

  The rotated factor loadings for the four-factor model are displayed in Table 3.

The observed variables of history of sexual abuse victimization, history of mental health

treatment, and number of prior adult non-sex arrests were dropped from any further

analyses with Model 1 given the presence of negative residual variances (as noted by

factor loadings of greater than 1.0). The variable of raised in a two-parent home up to

age 13 was also dropped from any future analyses with Model 1 as none of its factor

loadings met the retention guideline of 0.298. A total of 11 observed variables were thus

retained for use within the CFA for Model 1. Because two of the factors were comprised

of only one indicator, Factors 2 and 3 were excluded from further analysis. However,

due to researcher interest in the effect of these indicators on the outcome of interest (i.e.,

the initial sex offense), self-reported history of physical abuse victimization and self-

reported history of mental illness were retained for use within the structural component of

the analysis. In sum, only two latent factors emerged from the EFA, which will be

referred to herein as Demographic Factor (DEM) and Criminal History Factor (CRM).

Table 3. Rotated Factor Loadings for Model 1 Exploratory Factor Analysis

Variables	Factor 1	Factor 2	Factor 3	Factor 4
Two Parent	**-0.287**	0.215	0.071	0.147
Family CJS	**0.513**	0.096	-0.067	0.047
Education	**-0.317**	0.005	-0.070	0.101
Marital Status	**-0.688**	0.045	0.032	0.112
Years Employed	**-0.641**	-0.070	0.110	0.119
Sex Abuse	-0.071	**-1.022**	-0.323	0.200
Physical Abuse	0.016	**0.556**	-0.129	0.088
Mental Illness	0.054	-0.141	**-0.784**	-0.133
MH Treatment	0.110	0.117	**-1.059**	-0.212
Substance Abuse	0.180	0.027	-0.222	**-0.636**
Prior Non-sex	0.146	-0.136	-0.051	**-1.077**
Prior Violent	0.112	-0.025	-0.083	**-0.630**
Prior Property	0.181	-0.143	-0.061	**-0.747**
Prior Drug	0.043	0.102	-0.016	**-0.399**
Juvenile Non-sex	**0.672**	-0.067	-0.102	-0.454

Confirmatory factor analysis. The loadings of the nine observed variables onto

the two latent factors were tested using CFA for the complete data set. Table 4 displays

the unstandardized and standardized results of this analysis. Based on the standardized

estimates, all nine observed variables were significantly related to each corresponding

latent factor, though it should be noted that juvenile non-sex offense on record was not

related to factor DEM according to the unstandardized results. The standardized

estimates are also illustrated in Figure 7.

Table 4. Confirmatory Factor Analysis Results for Model 1

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.34	0.10	3.43	0.00
DEM	Education	-0.94	0.35	-2.68	0.01	-0.32	0.06	-5.05	0.00
DEM	Marital Status	-2.00	0.69	-2.89	0.00	-0.58	0.06	-10.42	0.00
DEM	Years Employed	-12.75	4.34	-2.94	0.00	-0.61	0.04	-14.02	0.00
DEM	Juvenile Non-sex	9.80	10.10	0.97	0.33	0.96	0.07	13.91	0.00
CRM	Substance Abuse	1.00	0.00	999.00	999.00	0.79	0.07	11.49	0.00
CRM	Prior Violent	0.55	0.13	4.13	0.00	0.65	0.03	22.71	0.00
CRM	Prior Property	1.58	0.38	4.13	0.00	0.78	0.03	27.73	0.00
CRM	Prior Drug	0.32	0.08	4.16	0.00	0.34	0.03	12.91	0.00

Note: Estimates are factor loadings.

Structural model. Utilizing the two latent factors created/confirmed by the EFA/CFA, and including the observed variables of history of physical abuse victimization and history of mental illness, a structural model was established and tested. This structural model can be viewed in Figure 7 and is a departure from the *a priori* Model 1 (which contained three latent factors). Numerous direct and indirect pathways were tested. The standardized and unstandardized results can be viewed in Tables 5 and 6, and the standardized path estimates can be viewed in Figure 7. Based on the standardized estimates, DEM had a small direct effect on history of mental illness (β=0.17, *p*=0.03), and was a moderate-to-large predictor of CRM (β=0.48, *p*=0.00). The latent factor DEM was also directly related to the outcome of interest, initial sex offense type (β=0.50, *p*=0.00), indicating that an increase in an offender's factor score for DEM led to a subsequent increase in the predicted probability of committing a rape as an initial sex offense. Having a history of mental illness had a small, though direct, effect on CRM (β=0.17, *p*=0.01). For initial sex offense type, it was discovered that having a history of mental illness decreased the predictive probability that an offender's initial sex crime was rape (β=-0.27, *p*=0.01). Finally, CRM had a small direct effect on the prediction of initial offense type (β=0.15, *p*=0.04); thus, an increase in CRM factor score subsequently increased the probability that the offender's initial sex offense type was rape. None of the hypothesized indirect effects were significant. The model chi-square statistic for this model indicated a poor fit for the data (χ^2_M=84.44, df_M=47, p=0.00) while the RMSEA goodness of fit statistic suggested a close approximate fit (0.04, 90%CI: 0.03-0.06, *p* =0.83). Sample size (N=463) was deemed adequate for the number of free parameters (35) within the tested model.

Table 5. Model 1 Structural Estimates: Direct Paths

Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	p	Estimate	SE	Estimate/SE	p
DEM → CRM	1.75	0.71	2.46	0.01	0.48	0.05	9.90	0.00
DEM → Physical Abuse	0.00	0.28	0.01	1.00	0.00	0.10	0.01	1.00
DEM → Mental Illness	0.47	0.29	1.62	0.11	0.17	0.08	2.13	0.03
DEM → Initial Sex Offense Type	1.76	0.72	2.43	0.02	0.50	0.10	5.09	0.00
Physical Abuse → Mental Illness	0.08	0.16	0.67	0.50	0.08	0.11	0.68	0.50
Physical Abuse → CRM	-0.16	0.12	-1.34	0.18	-0.13	0.09	-1.40	0.16
Physical Abuse → Initial Sex Offense Type	0.20	0.13	1.50	0.14	0.16	0.10	1.55	0.12
Mental Illness → CRM	0.22	0.09	2.38	0.02	0.17	0.06	2.82	0.01
Mental Illness → Initial Sex Offense Type	-0.33	0.13	-2.48	0.01	-0.27	0.10	-2.71	0.01
CRM → Initial Sex Offense Type	0.15	0.08	1.84	0.07	0.15	0.07	2.01	0.04

Table 6. Model 1 Structural Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	p	Estimate	SE	Estimate/SE	p
DEM → CRM → Initial Sex Offense Type	0.25	0.14	1.81	0.70	0.07	0.04	1.78	0.08
DEM → Physical Abuse → Mental Illness → CRM → Initial Sex Offense Type	0.00	0.00	0.01	1.00	0.00	0.00	0.01	1.00
DEM → Mental Illness → CRM → Initial Sex Offense Type	0.02	0.01	1.27	0.20	0.00	0.00	1.25	0.21
DEM → Physical Abuse → CRM → Initial Sex Offense Type	0.00	0.01	-0.01	1.00	0.00	0.00	-0.01	1.00
DEM → Mental Illness → Initial Sex Offense Type	-0.15	0.12	-1.28	0.20	-0.04	0.03	-1.31	0.19
DEM → Physical Abuse → Initial Sex Offense Type	0.00	0.06	0.01	1.00	0.00	0.02	0.01	1.00

Figure 7. Model 1 Estimates
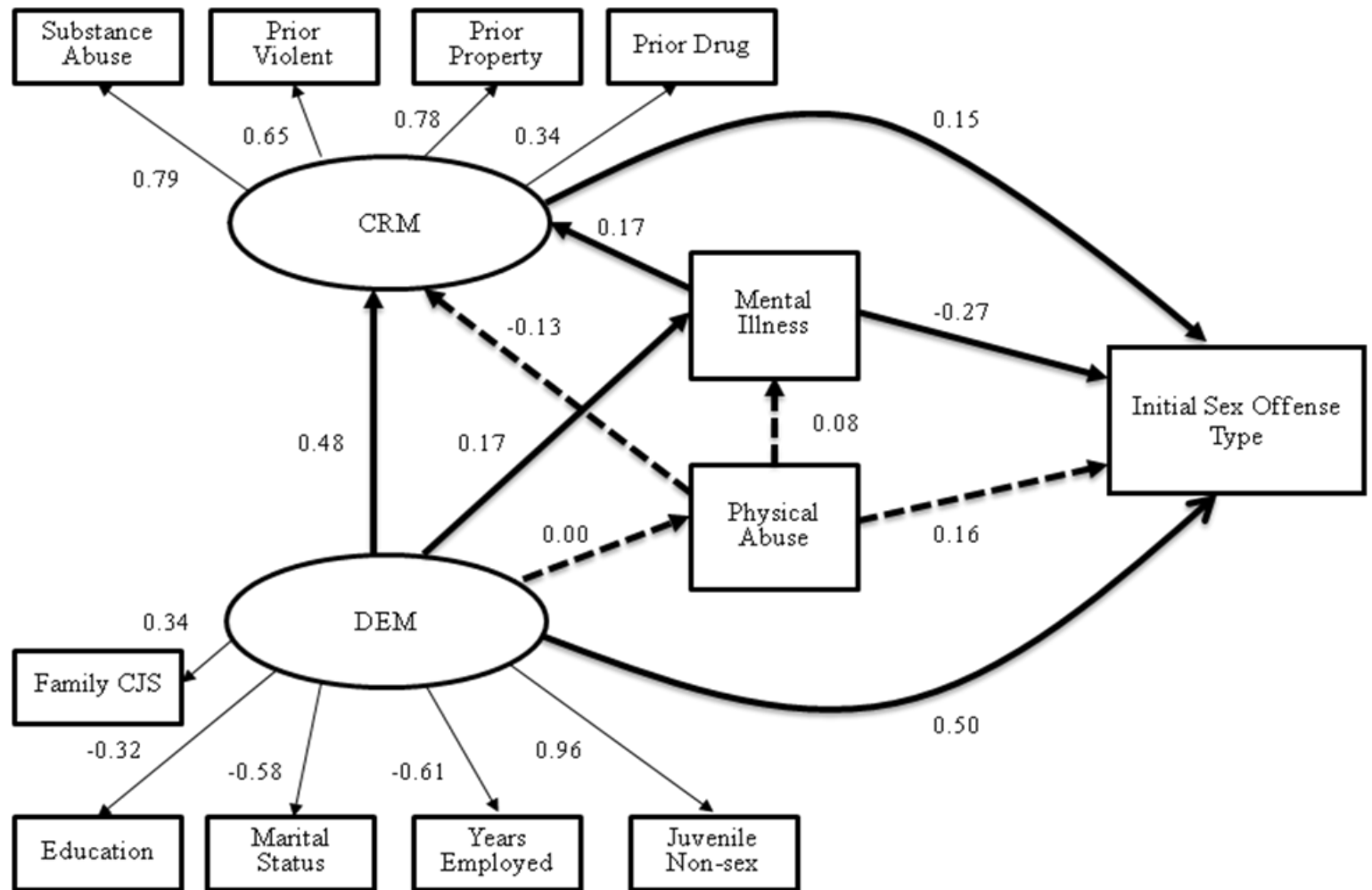
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients. Dashed lines indicate non-significance.

Model 1 Respecification. Model 1 was revised to reflect a more appropriate fit to the data. Specifically, three steps were taken. First, the observed variables of history of physical abuse victimization and juvenile non-sex offense on record were taken out of the analysis. The model chi-square statistic for this respecified model indicated a better fit for the data than the prior iteration and included a non-significant result (χ^2_M=37.20, df_M=31, p=0.21). Additionally, the RMSEA value improved (0.02, 90%CI: 0.00-0.04, p=0.99). However, the structural component of this respecification indicated that the direct pathway between DEM and history of mental illness was non-significant (β=0.12, p=0.14). For this reason, a second respecification was completed, in which the hypothesized direct relationship between DEM and history of mental illness was removed. This removal resulted in a smaller sample (N=459) and a slightly higher chi-square statistic (χ^2_M=43.26, df_M=32, p=0.08) and RMSEA value (0.03, 90%CI: 0.00-0.05, p=0.97).

A third respecification was completed, which included the total removal of the history of mental illness variable and all related paths. All subjects were included within this analysis (N=463). The resultant chi-square statistic was non-significant and slightly lower in value (χ^2_M=34.57, df_M=25, p=0.09), and the RMSEA value indicated a close approximate fit (0.03, 90%CI: 0.00-0.05, p=0.95). Additionally, tests of both the measurement and structural components of the respecified model returned significant results. For these reasons, it was decided that this model was the best fit to the data, and sample size (N=463) was deemed adequate for the number of free parameters (24) within this specific model.

The unstandardized and standardized CFA/measurement model results for this respecified model can be viewed in Table 7. The standardized estimates may also be viewed in Figure 8. As noted, all eight indicators significantly loaded onto the two latent factors of DEM and CRM.

Table 7. Confirmatory Factor Analysis Results for Respecified Model 1

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.42	0.12	3.56	0.00
DEM	Education	-0.70	0.29	-2.46	0.01	-0.31	0.07	-4.50	0.00
DEM	Marital Status	-2.09	0.84	-2.50	0.01	-0.69	0.07	-10.09	0.00
DEM	Years Employed	-11.40	4.06	-2.81	0.01	-0.70	0.07	-10.79	0.00
CRM	Substance Abuse	1.00	0.00	999.00	999.00	0.81	0.07	11.35	0.00
CRM	Prior Violent	0.53	0.14	3.75	0.00	0.67	0.03	22.44	0.00
CRM	Prior Property	1.41	0.38	3.74	0.00	0.75	0.03	26.81	0.00
CRM	Prior Drug	0.31	0.08	3.82	0.00	0.35	0.03	13.75	0.00

Note: Estimates are factor loadings.

Table 8. Respecified Model 1 Structural Estimates: Direct Paths

Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → CRM	1.12	0.50	2.26	0.02	0.37	0.05	6.93	0.00
DEM → Initial Sex Offense Type	1.33	0.59	2.23	0.03	0.50	0.11	4.69	0.00
CRM → Initial Sex Offense Type	0.13	0.06	1.93	0.05	0.14	0.07	2.05	0.04

Table 9. Respecified Model 1 Structural Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → CRM → Initial Sex Offense Type	0.14	0.07	1.93	0.05	0.05	0.03	1.87	0.06

Figure 8. Respecified Model 1 Estimates
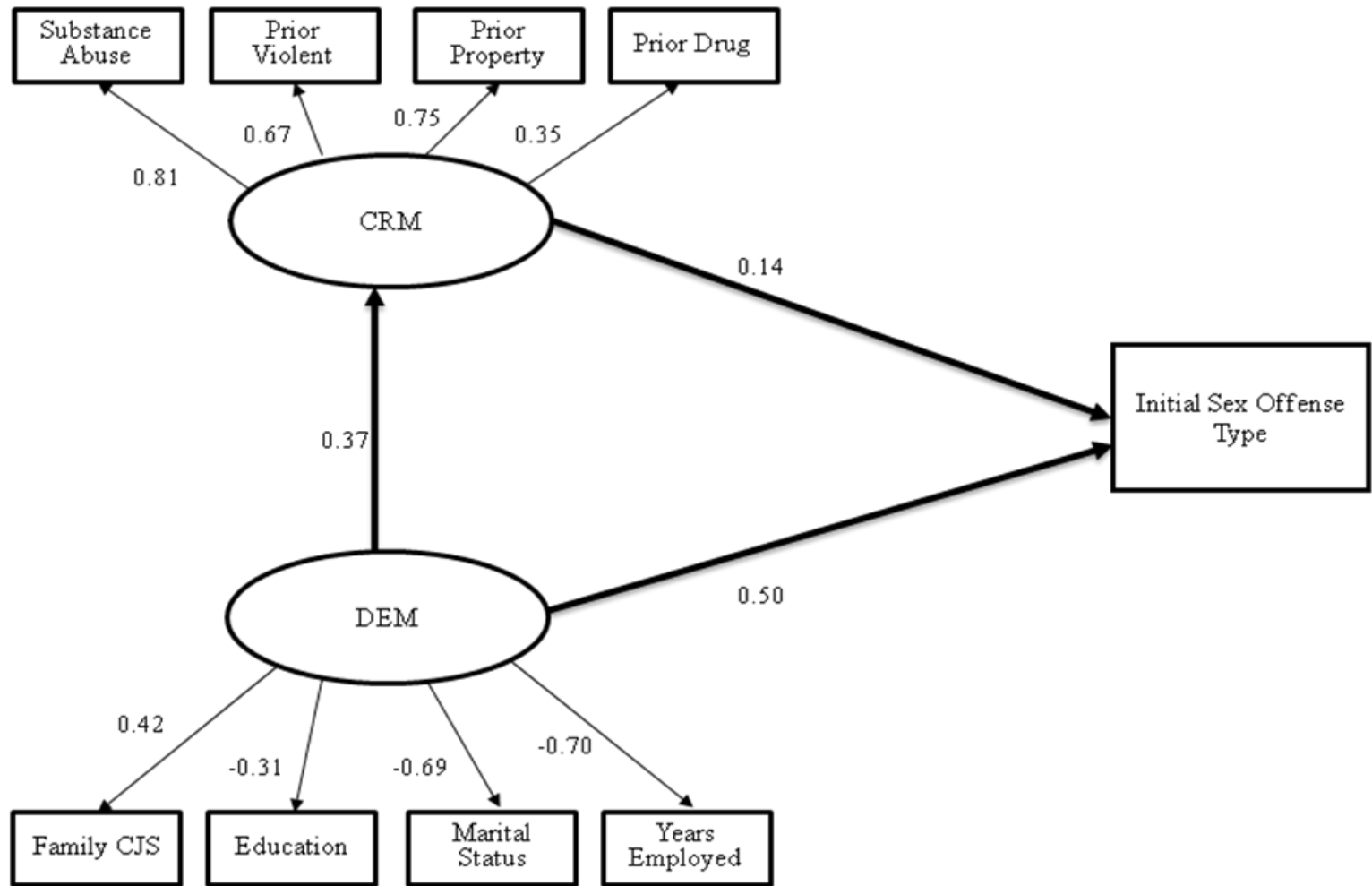
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients.

Although simplified from prior iterations, DEM had a medium, significant direct effect on CRM (β=0.37, *p*=0.00). The latent factor DEM was also a superior predictor of initial sex offense type (β=0.50, *p*=0.00), with higher offender factor scores on DEM leading to an increase in the predicted probability of rape as the initial sex offense type. The latent factor CRM had a small direct effect on initial sex offense type (β=0.14, p=0.04), indicating higher offender factor scores on CRM increase the predicted probability of rape as the initial sex offense type. The effect of DEM on initial sex offense type, as mediated by CRM, was not significant.

Model 2

Exploratory factor analysis. The EFA for Model 2 included the 21 observed variables as noted within Table 1. Weighted least-squares estimation with mean and variance adjustment was again utilized, as was varimax rotation to maximize factor loadings onto one factor for ease of interpretation.

The output of up to and including 4 factors to sufficiently explain the intercorrelations between the 21 observed variables, as hypothesized in Figure 5, was assessed. Exploratory factor analysis with only 1 factor returned a significant chi-square test of model fit (χ^2_M=1322.55, df_M=189, p=0.00). Significant chi-square tests of model fit were also present for 2 factors (χ^2_M=788.88, df_M=169, p=0.00), 3 factors (χ^2_M=398.37, df_M=150, *p*=0.00), and 4 factors (χ^2_M=267.05, df_M=132, p=0.00) respectively. However, RMSEA values decreased between 1 and 4 factors (i.e., 1 Factor RMSEA=0.11; 2 factor RMSEA=0.09; 3 factor RMSEA=0.06; 4 factor RMSEA=0.05), indicating improved fit with increasing factor extractions. A review of the rotated factor loadings within the four-factor model indicated that two of the observed variables, history of mental illness

and number of prior adult non-sex arrests, returned negative residual variances. These two variables were removed from any future analyses with Model 2. The variables of raised in a two-parent home up to age 13, education level, living status at time of initial sex offense, history of physical abuse victimization, and number of male victims were also removed as no factor loadings met the retention guideline of 0.298.

A new EFA was completed with the remaining 14 variables. Exploratory factor analysis with only 1 factor returned a significant chi-square test of model fit (χ^2_M=604.13, df_M=77, p=0.00). A significant chi-square test of model fit was also present for 2 factors (χ^2_M=337.61, df_M=64, p=0.00). At 3 factors, a nonsignificant chi-square test of model fit was returned (χ^2_M=66.75, df_M=52, p=0.08) and the associated RMSEA value was 0.03, indicating that the retention of 3 factors was sufficient. The rotated factor loadings for the three-factor model are displayed in Table 10. Researcher-assigned names for these factors include Demographic Factor (DEM), Criminal History/Mental Health Factor (CRM/MH), and Psychological Factor (PSY) herein.

Table 10. Rotated Factor Loadings for Model 2 Exploratory Factor Analysis

Variables	Factor 1	Factor 2	Factor 3
Family CJS	**-0.518**	0.182	-0.021
Marital Status	**0.726**	0.083	0.144
Years Employed	**0.672**	0.193	0.145
Sex Abuse	0.002	**0.643**	-0.007
MH Treatment	-0.180	0.135	**-0.385**
Substance Abuse	-0.115	-0.094	**-0.775**
Treatment Level	0.198	**0.921**	0.183
Denial	-0.058	**-0.556**	-0.129
Release Age	**0.848**	0.087	0.028
Stranger Victims	**-0.525**	-0.296	-0.185
Prior Violent	-0.013	-0.212	**-0.626**
Prior Property	-0.118	-0.042	**-0.792**
Prior Drug	-0.037	-0.157	**-0.317**
Juvenile Non-sex	**-0.575**	-0.055	-0.532

Confirmatory factor analysis. The loadings of the 14 observed variables onto the three latent factors were tested using CFA for the complete data set. Table 11 displays the unstandardized and standardized results of this analysis, and the standardized results may also be viewed visually in Figure 9. Based on the standardized estimates, all 14 observed variables were significantly related to each corresponding latent factor.

Structural model. Utilizing the three latent factors created/confirmed by the EFA/CFA, a structural model was established and tested. This structural model can be viewed in Figure 9 and is a large departure from *a priori* Model 2 (which contained four latent factors related to offender ecological, psychological, and clinical characteristics, as well as a separate factor related to aspects of the initial sex offense, and multiple hypothesized direct and indirect pathways). Direct and indirect pathways for the current model were tested. The standardized and unstandardized results can be viewed in Tables 12 and 13, and the standardized path estimates can be viewed in Figure 9. Based on the standardized estimates, DEM had a small direct effect on PSY (β=-0.24, *p*=0.00) and a medium effect on CRM/MH (0.43, *p*=0.00). This latent factor was also found to have a medium direct effect on the outcome of sex recidivism (β=0.33, *p*=0.00), providing evidence that high factor scores for the DEM factor increased the predictive probability that an offender had an arrest for a sex offense in the follow-up period. The latent factor CRM/MH had a small, direct effect on PSY (β=-0.23, p=0.00), but was unrelated to sex recidivism. Finally, the direct effect of PSY on sex recidivism was not significant. None of the indirect effects were significant. The model chi-square statistic for this model indicated a poor fit for the data (χ^2_M=208.99, df_M=85, p=0.00) while the RMSEA goodness of fit statistic suggested a moderate approximate fit (0.06, 90%CI: 0.05-0.07, *p*

=0.14). Additionally, an error message was reported by Mplus during the analysis

indicating that the residual covariance matrix was not positive definite. Specifically,

there was a negative variance present for one variable: sex offender treatment level

completed in prison. This issue was considered during respecification of the model.

Sample size (N=463) was deemed adequate for the number of free parameters (43) within

the tested model.

Table 11. Confirmatory Factor Analysis Results for Model 2

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.34	0.10	3.35	0.00
DEM	Marital Status	-2.09	0.63	-3.32	0.00	-0.72	0.04	-16.61	0.00
DEM	Years Employed	-15.58	4.75	-3.28	0.00	-0.71	0.04	-19.66	0.00
DEM	Release Age	-24.40	7.30	-3.34	0.00	-0.71	0.03	-21.71	0.00
DEM	Stranger Victims	1.93	0.59	3.29	0.00	0.66	0.05	12.13	0.00
DEM	Juvenile Non-sex	2.35	0.72	3.25	0.00	0.80	0.06	13.84	0.00
PSY	Sex Abuse	1.00	0.00	999.00	999.00	0.50	0.06	8.19	0.00
PSY	Treatment Level	2.24	0.39	5.75	0.00	1.12	0.09	12.97	0.00
PSY	Denial	-1.07	0.15	-7.29	0.00	-0.53	0.05	-9.88	0.00
CRM/MH	MH Treatment	1.00	0.00	999.00	999.00	0.38	0.06	5.97	0.00
CRM/MH	Substance Abuse	2.08	0.40	5.23	0.00	0.79	0.07	11.47	0.00
CRM/MH	Prior Violent	1.94	0.32	5.99	0.00	0.68	0.03	22.47	0.00
CRM/MH	Prior Property	5.15	0.90	5.69	0.00	0.75	0.03	29.09	0.00
CRM/MH	Prior Drug	1.17	0.21	5.68	0.00	0.36	0.03	13.87	0.00

Note: Estimates are factor loadings.

Table 12. Model 2 Structural Estimates: Direct Paths

Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → Sex Recidivism	0.95	0.44	2.15	0.03	0.33	0.11	2.97	0.00
DEM → PSY	-0.35	0.15	-2.35	0.02	-0.24	0.07	-3.75	0.00
DEM → CRM/MH	0.48	0.18	2.66	0.01	0.43	0.04	10.41	0.00
PSY → Sex Recidivism	0.07	0.20	0.36	0.72	0.04	0.10	0.36	0.72
CRM/MH → PSY	-0.30	0.10	-2.95	0.00	-0.23	0.06	-4.00	0.00
CRM/MH → Sex Recidivism	0.25	0.24	1.07	0.03	0.10	0.09	1.07	0.29

Table 13. Model 2 Structural Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM →PSY → Sex Recidivism	-0.03	0.07	-0.35	0.73	-0.01	0.03	-0.35	0.73
DEM → CRM/MH → PSY → Sex Recidivism	-0.01	0.03	-0.36	0.72	0.00	0.01	-0.36	0.72
DEM →CRM/MH → Sex Recidivism	0.12	0.12	1.01	0.31	0.04	0.04	1.01	0.31

Figure 9. Model 2 Estimates
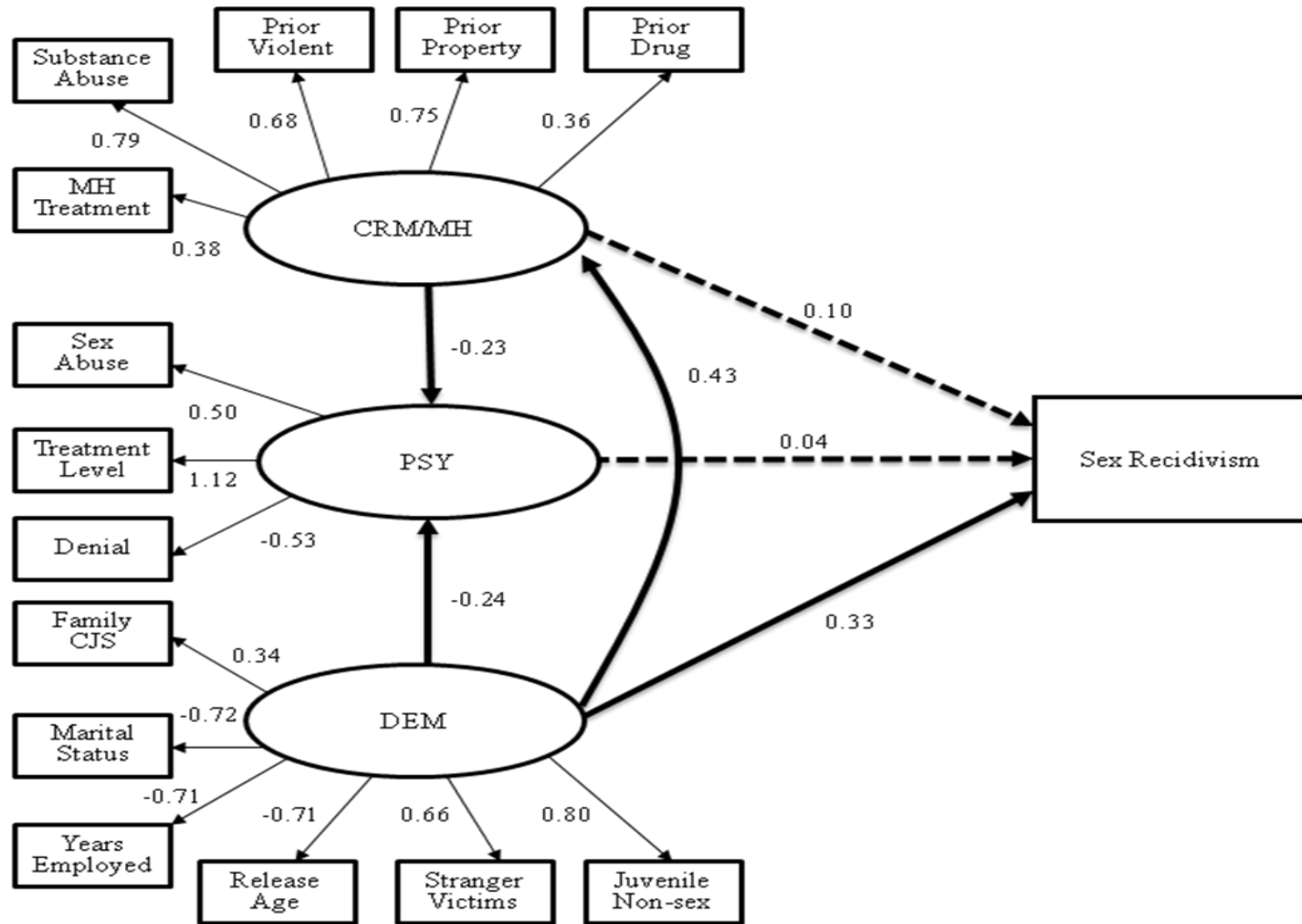
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients. Dashed lines indicate non-significance.

Model 2 Respecification. Model 2 was revised to reflect a more appropriate fit

to the data. Given the negative variance present for treatment level during the initial

iteration of the model, the variable was dropped from further analyses. The predicted

pathways of the model were also changed to accommodate the loss of the factor. This

left only the two variables of offender denial of initial offense and history of sexual abuse

victimization to load onto the factor PSY. Given that it is recommended that latent

variables contain at least three factors (Kline, 2005, p.172), PSY was dissolved and each

remaining variable was entered into the model as a separate endogenous variable. Figure

10 illustrates the model respecification, and model estimates can be viewed in Tables 14,

15, and 16.

The model chi-square statistic for this respecified model indicated a slightly better

fit for the data than the prior iteration, though a significant result was again found

(χ^2_M=177.76, df$_M$=70, p=0.00). The RMSEA value was nearly identical to the first

iteration (0.06, 90%CI: 0.05-0.07, p =0.11). An examination of the structural component

of the respecification indicated that the direct pathways between DEM and CRM/MH

were significant (β=0.43, p=0.00), as were the pathways between DEM and sex

recidivism (β=0.32, p=0.00); thus, an increase in offender factor score for DEM resulted

in an moderate increase in the predictive probability of sex recidivism occurrence. The

CRM/MH factor had a small, positive direct effect on offender denial of initial offense,

though it did not have a significant direct effect on sex recidivism. Finally, offender

history of sexual abuse victimization had a negative effect on denial (β=-0.32, p=0.00)

and a small, positive direct effect on sex recidivism (β=0.23, p=0.00), indicating that

having a history of sexual abuse victimization decreased the predictive probability of

offender denial of initial sex offense, but increased the predictive probability of sex recidivism. No other pathways, both direct and indirect, were significant. As there were no remaining logical connections between the model variables and the outcome of sex recidivism, no further respecifications for Model 2 were completed. Sample size (N=463) was deemed adequate for the number of free parameters (41) within the tested model.

Table 14. Confirmatory Factor Analysis Results for Respecified Model 2

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	p	Estimate	SE	Estimate/SE	p
DEM	Family CJS	1.00	0.00	999.00	999.00	0.38	0.10	3.80	0.00
DEM	Marital Status	-2.56	0.84	-3.07	0.00	-0.72	0.04	-16.87	0.00
DEM	Years Employed	-12.89	4.05	-3.19	0.00	-0.70	0.04	-19.57	0.00
DEM	Release Age	-20.50	6.31	-3.25	0.00	-0.71	0.03	-21.53	0.00
DEM	Stranger Victims	2.05	0.67	3.05	0.00	0.64	0.06	11.67	0.00
DEM	Juvenile Non-sex	3.54	1.34	2.63	0.01	0.82	0.06	14.24	0.00
CRM/MH	MH Treatment	1.00	0.00	999.00	999.00	0.40	0.06	6.34	0.00
CRM/MH	Substance Abuse	3.02	0.93	3.25	0.00	0.79	0.07	11.43	0.00
CRM/MH	Prior Violent	1.64	0.30	5.40	0.00	0.65	0.03	20.96	0.00
CRM/MH	Prior Property	4.64	0.91	5.10	0.00	0.77	0.03	27.14	0.00
CRM/MH	Prior Drug	1.00	0.19	5.14	0.00	0.35	0.03	13.14	0.00

Note: Estimates are factor loadings.

Table 15. Respecified Model 2 Structural Estimates: Direct Paths

Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	p	Estimate	SE	Estimate/SE	p
DEM → Denial	0.25	0.20	1.22	0.22	0.09	0.07	1.34	0.18
DEM → Sex Abuse	-0.28	0.19	-1.49	0.14	-0.11	0.07	-1.64	0.10
DEM → CRM/MH	0.45	0.18	2.50	0.01	0.43	0.04	9.86	0.00
DEM → Sex Recidivism	0.86	0.43	2.01	0.04	0.32	0.11	3.01	0.00
CRM/MH → Denial	0.37	0.17	2.18	0.03	0.15	0.06	2.37	0.02
CRM/MH → Sex Recidivism	0.19	0.23	0.85	0.39	0.08	0.09	0.85	0.40
Sex Abuse → CRM/MH	-0.01	0.03	-0.46	0.65	-0.03	0.06	-0.45	0.65
Sex Abuse → Denial	-0.35	0.09	-4.03	0.00	-0.32	0.07	-4.51	0.00
Sex Abuse → Sex Recidivism	0.25	0.13	1.91	0.06	0.23	0.11	2.04	0.04
Denial → Sex Recidivism	0.15	0.11	1.40	0.16	0.15	0.11	1.42	0.16

Table 16. Respecified Model 2 Structural Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	p	Estimate	SE	Estimate/SE	p
DEM → Denial → Sex Recidivism	0.04	0.04	0.98	0.33	0.01	0.01	0.99	0.32
DEM → CRM → Denial → Sex Recidivism	0.03	0.03	1.01	0.31	0.01	0.01	1.03	0.30
DEM → Sex Abuse → Sex Recidivism	-0.07	0.06	-1.20	0.23	-0.03	0.02	-1.23	0.22
DEM → CRM → Sex Recidivism	0.09	0.11	0.82	0.41	0.03	0.04	0.82	0.41
DEM → Sex Abuse → Denial → Sex Recidivism	0.02	0.02	1.00	0.32	0.01	0.01	1.01	0.31
DEM → Sex Abuse → CRM → Sex Recidivism	0.00	0.00	0.39	0.70	0.00	0.00	0.38	0.70

Figure 10. Model 2 Respecification Estimates
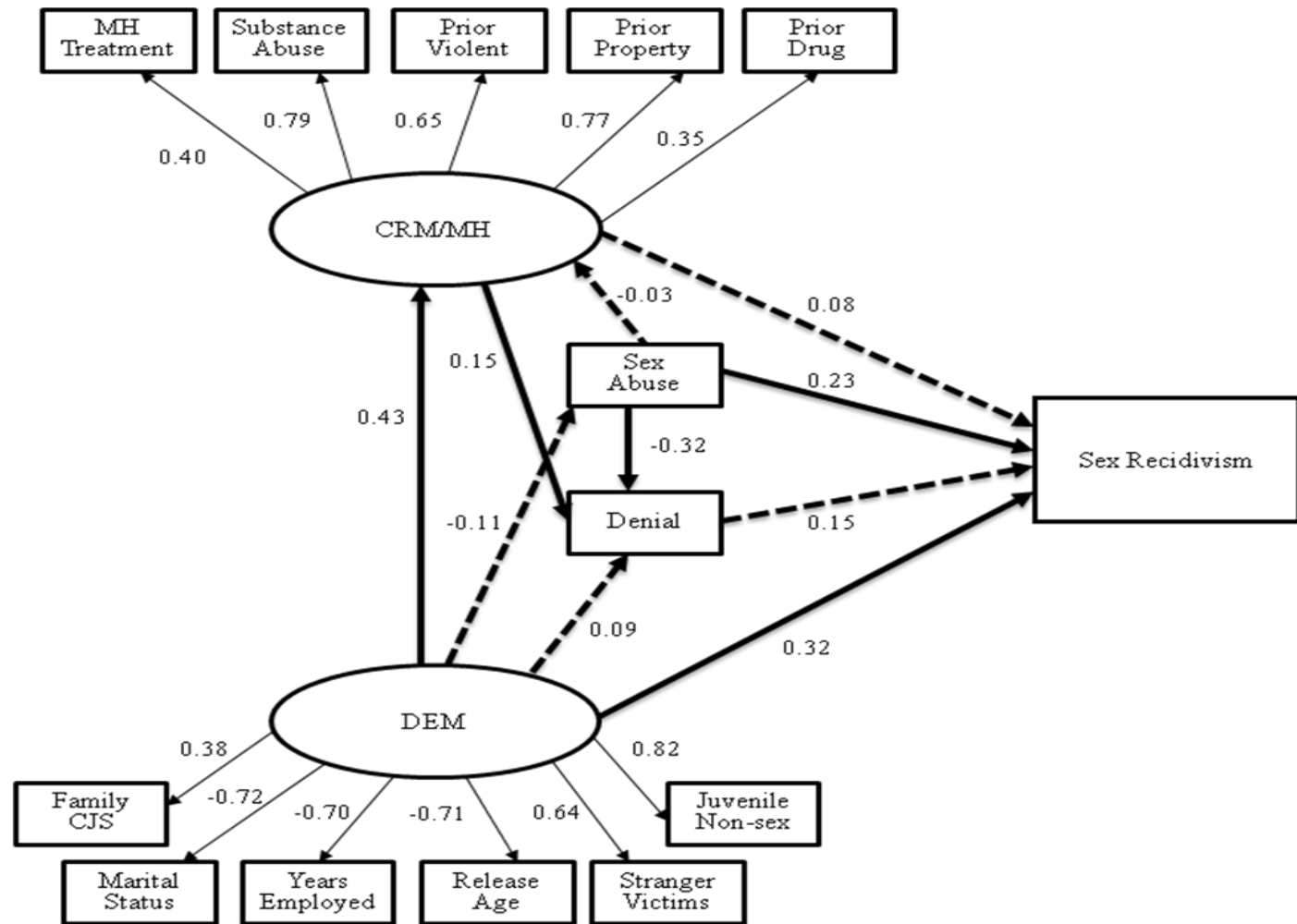
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients. Dashed lines indicate non-significance.

Model 3

  Exploratory factor analysis. To determine if the processes involved in sexual

reoffending are similar to those involved in non-sex reoffending, the results of the EFA

for Model 2 were used to guide the CFA for Model 3. As such, a separate EFA was not

completed for Model 3. To review the factor loadings, please revisit Table 10.

  Confirmatory factor analysis. The loadings of the 14 observed variables onto

the three latent factors were tested using CFA for the complete data set. Table 17

displays the unstandardized and standardized results of this analysis. Standardized results

may also be viewed visually in Figure 11. All observed variables were significantly

related to each corresponding latent factor.

  Structural model. The structural model was subsequently tested, and the direct

and indirect pathways were analyzed. Like Model 2, *a posteriori* Model 3 (see Figure

11) is a large departure from *a priori* Model 3 for non-sexual reoffending. The

standardized and unstandardized results can be viewed in Tables 18 and 19. The factor

DEM was a sufficient predictor of non-sex recidivism (β=0.58, *p*=0.00), interpreted as

higher factor scores on DEM increasing the probability of an arrest for a non-sex offense

during the follow-up period. It also had a small, negative direct effect on PSY (β=-0.24,

p=0.00), and was a moderate predictor of CRM/MH (β=0.43, *p*=0.00). The pathway

between PSY and non-sex recidivism was non-significant. Finally, CRM/MH had a

small negative direct effect on PSY (β=-0.23, *p*=0.00) and a small positive direct effect

on sex recidivism (β=0.18, *p*=0.00). The indirect effect of DEM on non-sex recidivism

through CRM/MH was significant (β=0.08, *p*=0.02). The model chi-square statistic for

Model 3 indicated a poor fit for the data overall (χ^2_M=215.52, df_M=85, *p*=0.00) while the

RMSEA goodness of fit statistic suggested a moderate approximate fit (0.06, 90%CI: 0.05-0.07, p=0.09). Similar to the original structural analysis of Model 2, an error message was reported by Mplus indicating that the residual covariance matrix was not positive definite, which was again related to the indicator of sex offender treatment level completed in prison. This issue was considered during respecification of the model. Sample size (N=463) was deemed adequate for the number of free parameters (43) within the tested model.

Table 17. Confirmatory Factor Analysis Results for Model 3

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.37	0.10	3.66	0.00
DEM	Marital Status	-1.98	0.55	-3.63	0.00	-0.72	0.04	-17.34	0.00
DEM	Years Employed	-14.91	4.19	-3.56	0.00	-0.73	0.04	-20.28	0.00
DEM	Release Age	-22.88	6.26	-3.66	0.00	-0.71	0.03	-23.29	0.00
DEM	Stranger Victims	1.77	0.50	3.54	0.00	0.65	0.06	11.78	0.00
DEM	Juvenile Non-sex	2.17	0.61	3.55	0.00	0.79	0.06	13.79	0.00
PSY	Sex Abuse	1.00	0.00	999.00	999.00	0.51	0.06	8.25	0.00
PSY	Treatment Level	2.18	0.37	5.89	0.00	1.10	0.08	13.33	0.00
PSY	Denial	-1.07	0.15	-7.18	0.00	-0.54	0.05	-10.01	0.00
CRM/MH	MH Treatment	1.00	0.00	999.00	999.00	0.38	0.06	5.86	0.00
CRM/MH	Substance Abuse	2.13	0.41	5.18	0.00	0.81	0.07	11.67	0.00
CRM/MH	Prior Violent	1.91	0.33	5.82	0.00	0.67	0.03	22.32	0.00
CRM/MH	Prior Property	5.09	0.91	5.62	0.00	0.74	0.03	28.23	0.00
CRM/MH	Prior Drug	1.21	0.22	5.54	0.00	0.37	0.03	13.99	0.00

Note: Estimates are factor loadings.

Table 18. Model 3 Structural Estimates: Direct Paths

Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → Non-sex recidivism	1.59	0.46	3.43	0.00	0.58	0.06	9.71	0.00
DEM → PSY	-0.34	0.14	-2.44	0.02	-0.24	0.07	-3.73	0.00
DEM → CRM/MH	0.45	0.16	2.81	0.01	0.43	0.04	10.30	0.00
PSY → Non-sex recidivism	-0.22	0.12	-1.90	0.06	-0.11	0.06	-1.91	0.06
CRM/MH → PSY	-0.31	0.11	-2.92	0.00	-0.23	0.06	-3.99	0.00
CRM/MH → Non-sex recidivism	0.47	0.16	2.93	0.00	0.18	0.06	3.22	0.00

Table 19. Model 3 Structural Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM →PSY → Non-sex recidivism	0.07	0.05	1.59	0.11	0.03	0.02	1.59	0.11
DEM → CRM/MH → PSY → Non-sex recidivism	0.03	0.02	1.46	0.15	0.01	0.01	1.46	0.15
DEM →CRM/MH → Non-sex recidivism	0.21	0.09	2.36	0.02	0.08	0.03	2.36	0.02

Figure 11. Model 3 Estimates
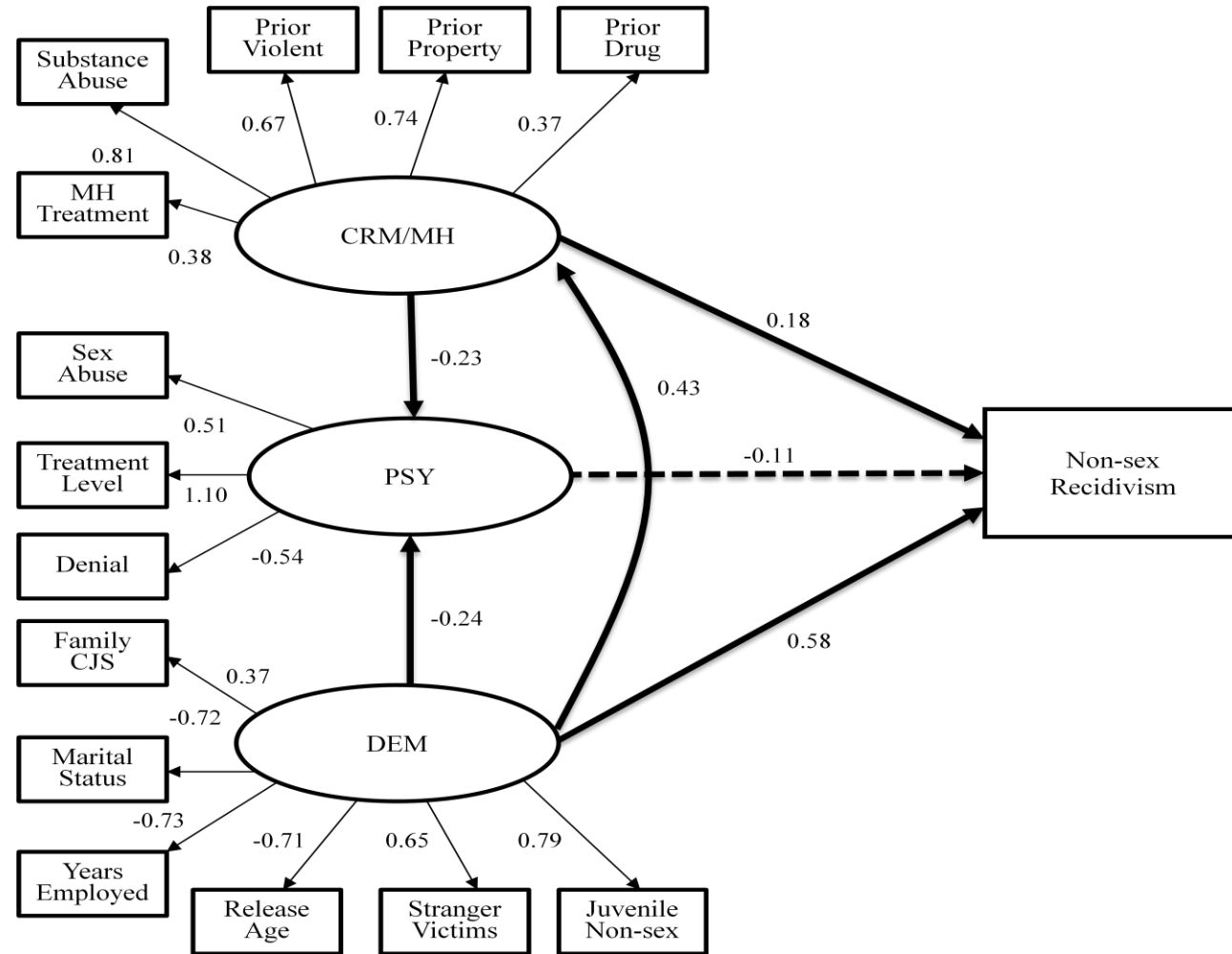
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients. Dashed lines indicate non-significance.

Model 3 respecification. Model 3 was revised to achieve an improved fit to the data. Given the negative variance present for treatment level during the initial iteration of Model 3, the variable was dropped from further analyses. As only two indicators remained for factor PSY, PSY was disbanded and the observed variables of history of sex abuse victimization and offender denial of initial offense were entered into the model separately. Figure 12 illustrates the model respecification, and model estimates can be viewed in Tables 20, 21, and 22.

The model chi-square statistic for this respecified model indicated a slightly better fit for the data than the prior iteration, though a significant result was again found (χ^2_M=187.58, df_M=70, p=0.00). The RMSEA value remained similar, and indicated a moderate fit for the second time (0.06, 90%CI: 0.05-0.07, p=0.051). An examination of the structural component of the respecification indicated that some of the direct pathways were nonsignificant, particularly those related to the observed variables of offender sexual abuse victimization and offender denial of initial sex offense. For these reasons, these two variables were excluded from further analysis, and a second respecification was completed. Sample size (N=463) was again deemed adequate for the number of free parameters (41) within the respecified model.

Table 20. Confirmatory Factor Analysis Results for Respecified Model 3 (Version 1)

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.40	0.10	4.08	0.00
DEM	Marital Status	-2.46	0.76	-3.24	0.00	-0.73	0.04	-17.75	0.00
DEM	Years Employed	-12.46	3.72	-3.35	0.00	-0.72	0.04	-20.22	0.00
DEM	Release Age	-19.34	5.64	-3.43	0.00	-0.71	0.03	-23.43	0.00
DEM	Stranger Victims	1.87	0.60	3.14	0.00	0.63	0.06	11.34	0.00
DEM	Juvenile Non-sex	3.13	1.11	2.82	0.01	0.80	0.06	14.09	0.00
CRM/MH	MH Treatment	1.00	0.00	999.00	999.00	0.40	0.06	6.22	0.00
CRM/MH	Substance Abuse	3.25	1.05	3.10	0.00	0.81	0.07	11.67	0.00
CRM/MH	Prior Violent	1.63	0.31	5.25	0.00	0.64	0.03	20.79	0.00
CRM/MH	Prior Property	4.57	0.91	5.04	0.00	0.75	0.03	26.53	0.00
CRM/MH	Prior Drug	1.05	0.21	5.02	0.00	0.36	0.03	13.34	0.00

Note: Estimates are factor loadings.

Table 21. Respecified Model 3 (Version 1) Estimates: Direct Paths

| Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → Denial	0.23	0.19	1.21	0.23	0.09	0.07	1.31	0.19
DEM → Sex Abuse	-0.26	0.18	-1.48	0.14	-0.11	0.07	-1.63	0.10
DEM → CRM/MH	0.43	0.17	2.58	0.01	0.43	0.04	9.76	0.00
DEM → Non-sex recidivism	1.99	0.66	3.02	0.00	0.59	0.06	10.34	0.00
CRM/MH → Denial	0.38	0.18	2.17	0.03	0.15	0.06	2.38	0.02
CRM/MH → Non-sex recidivism	0.62	0.21	2.97	0.00	0.18	0.05	3.41	0.00
Sex Abuse → CRM/MH	-0.01	0.03	-0.48	0.63	-0.03	0.06	-0.48	0.64
Sex Abuse → Denial	-0.35	0.09	-4.03	0.00	-0.32	0.07	-4.51	0.00
Sex Abuse → Non-sex recidivism	-0.35	0.09	-4.03	0.00	-0.07	0.08	-0.86	0.39
Denial → Non-sex recidivism	0.10	0.09	1.08	0.28	0.07	0.07	1.08	0.28

Table 22. Respecified Model 3 (Version 1) Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → Denial → Non-sex recidivism	0.02	0.03	0.83	0.41	0.01	0.01	0.83	0.41
DEM → CRM → Denial → Non-sex recidivism	0.02	0.02	0.94	0.35	0.01	0.01	0.94	0.35
DEM → Sex Abuse → Non-sex recidivism	0.03	0.03	0.78	0.43	0.01	0.01	0.79	0.43
DEM → CRM → Non-sex recidivism	0.26	0.12	2.27	0.02	0.08	0.03	2.31	0.02
DEM → Sex Abuse → Denial → Non-sex recidivism	0.01	0.01	0.88	0.38	0.00	0.00	0.88	0.38
DEM → Sex Abuse → CRM → Non-sex recidivism	0.00	0.00	0.47	0.64	0.00	0.00	0.47	0.64

Figure 12. Model 3 Respecification (Version 1) Estimates
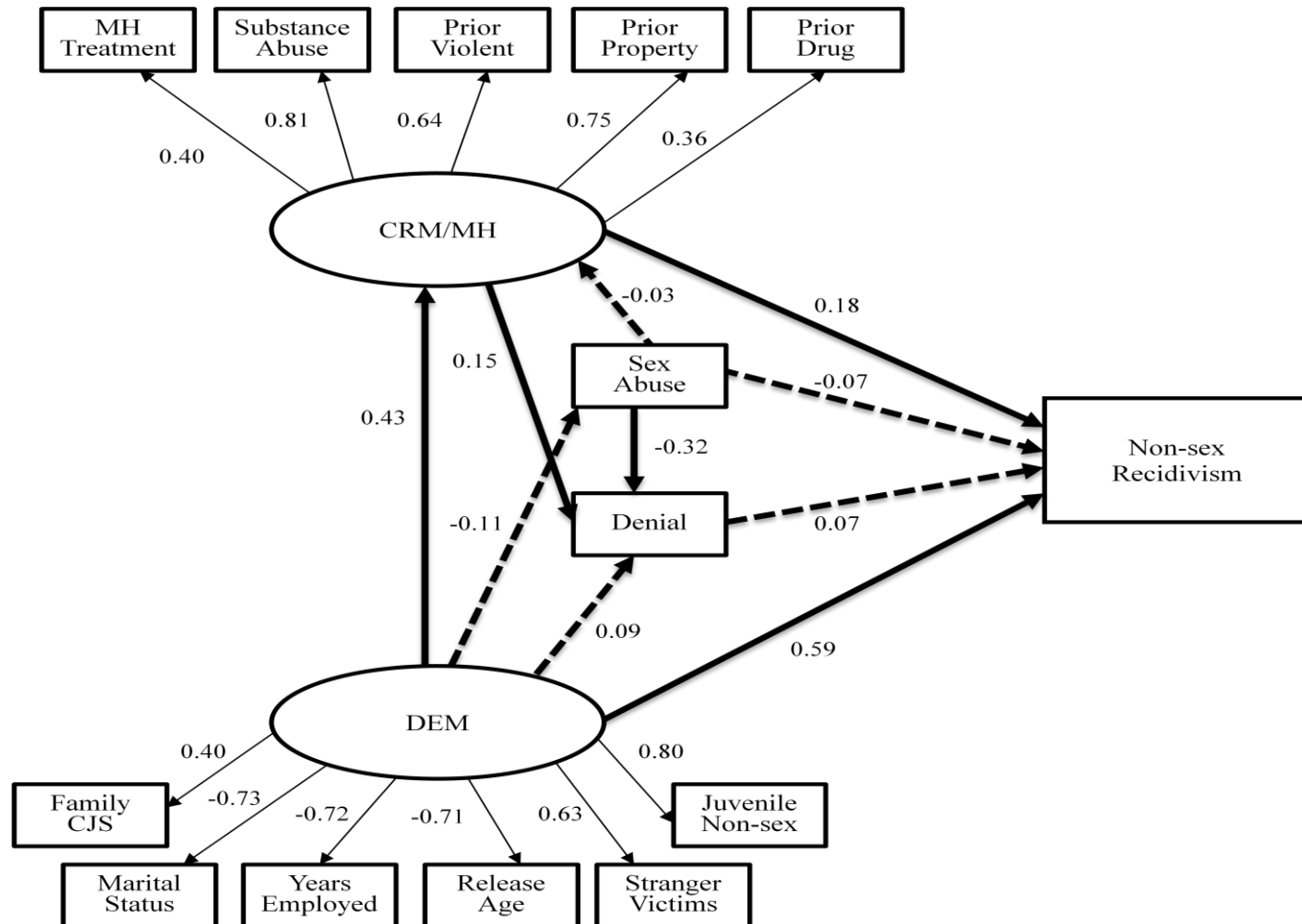
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients. Dashed lines indicate non-significance.

An illustration of the second Model 3 respecification can be viewed in Figure 13. The model was simplified greatly from the prior respecification, leaving only two direct paths and one indirect pathway to the outcome, non-sex recidivism. The results of the respecification can be viewed in Tables 23, 24, and 25. All designated pathways were significant. The latent factor DEM had a moderate direct effect on CRM/MH (β=-0.43, p=0.00) and was a significant predictor of non-sex recidivism (β=0.61, p=0.00). The CRM/MH latent factor was also found to be a direct predictor of non-sex recidivism (β=-0.23, p=0.00). Finally, the indirect effect of DEM on non-sex recidivism through CRM/MH was significant (β=0.08, p=0.01). Although significant, the model chi-square statistic for the second respecification indicated an improved fit to the data from the prior iteration (χ^2_M=151.79, df$_M$=52, p=0.00) while the RMSEA goodness of fit statistic again suggested a moderate approximate fit (0.06, 90%CI: 0.05-0.08, p=0.02). For this reason, this respecification was deemed to be the model that best fit the current data. Sample size (N=463) was deemed adequate for the number of free parameters (31) within this final model.

Table 23. Confirmatory Factor Analysis Results for Respecified Model 3 (Version 2)

Latent Factor	Variable	Unstandardized Results				Standardized Results			
		Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM	Family CJS	1.00	0.00	999.00	999.00	0.41	0.10	4.28	0.00
DEM	Marital Status	-2.35	0.71	-3.33	0.00	-0.73	0.04	-17.80	0.00
DEM	Years Employed	-11.80	3.42	-3.45	0.00	-0.71	0.04	-20.44	0.00
DEM	Release Age	-18.56	5.25	-3.54	0.00	-0.71	0.03	-23.94	0.00
DEM	Stranger Victims	1.74	0.54	3.22	0.00	0.62	0.06	11.08	0.00
DEM	Juvenile Non-sex	2.97	1.03	2.88	0.00	0.80	0.06	14.06	0.00
CRM/MH	MH Treatment	1.00	0.00	999.00	999.00	0.41	0.06	6.49	0.00
CRM/MH	Substance Abuse	3.15	1.01	3.12	0.00	0.82	0.07	11.70	0.00
CRM/MH	Prior Violent	1.54	0.29	5.42	0.00	0.64	0.03	20.28	0.00
CRM/MH	Prior Property	4.42	0.86	5.16	0.00	0.76	0.03	25.83	0.00
CRM/MH	Prior Drug	0.99	0.19	5.16	0.00	0.36	0.03	13.25	0.00

Note: Estimates are factor loadings.

Table 24. Respecified Model 3 (Version 2) Estimates: Direct Paths

| Paths: Direct Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → CRM/MH	0.42	0.16	2.69	0.01	0.43	0.04	10.24	0.00
DEM → Non-sex recidivism	1.92	0.62	3.11	0.00	0.61	0.06	10.91	0.00
CRM/MH → Non-sex recidivism	0.62	0.19	3.24	0.00	0.20	0.05	3.82	0.00

Table 25. Respecified Model 3 (Version 2) Estimates: Indirect Paths

Paths: Indirect Effects	Unstandardized Results				Standardized Results			
	Estimate	SE	Estimate/SE	*p*	Estimate	SE	Estimate/SE	*p*
DEM → CRM → Non-sex recidivism	0.26	0.11	2.44	0.02	0.08	0.03	2.48	0.01

Figure 13. Model 3 Respecification (Version 2) Estimates
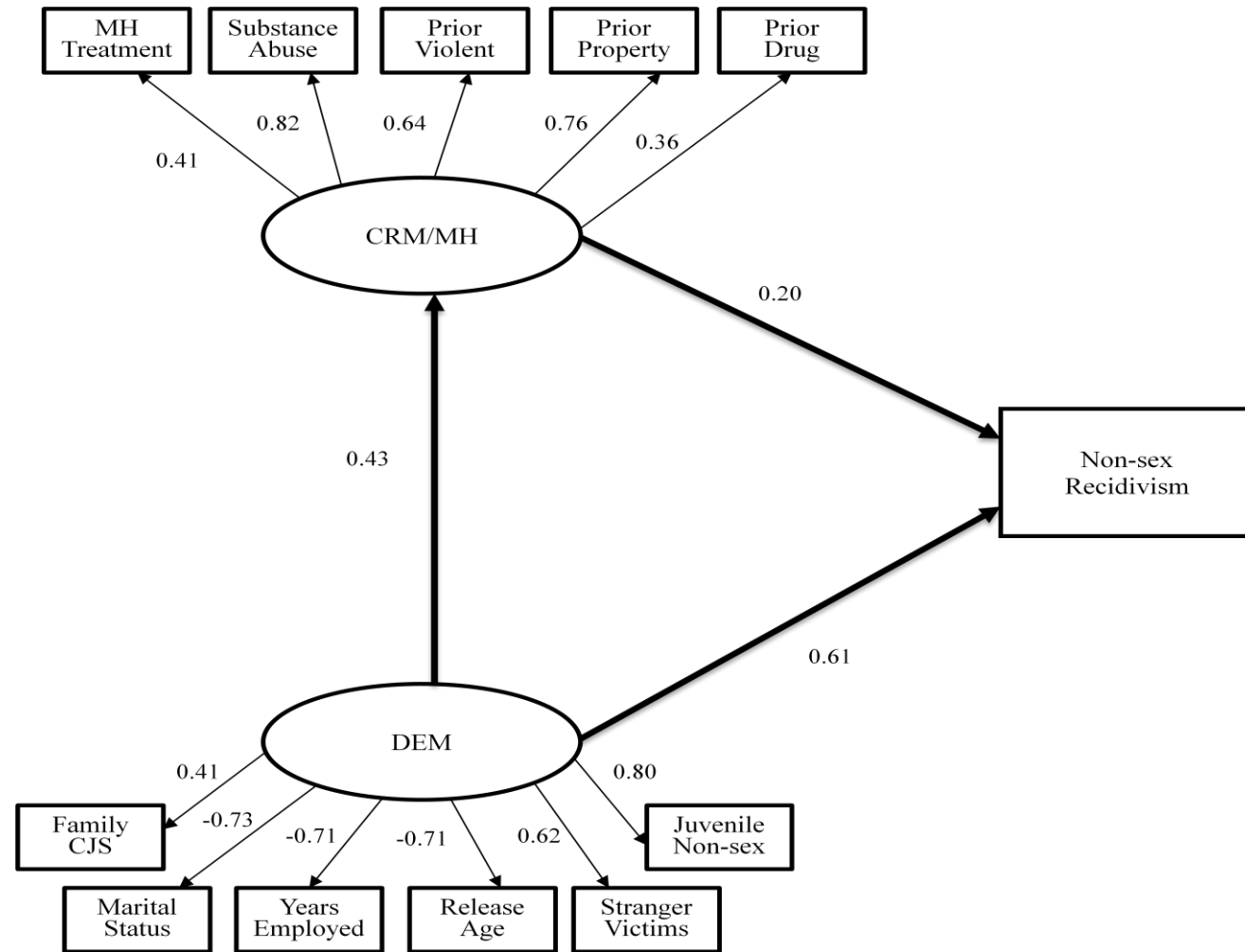
Note: Thin lines represent the *a posteriori* measurement model while thick lines represent the *a posteriori* structural model. Measurement model values are factor loadings and structural model values are path coefficients.

CHAPTER 6

Discussion

The present dissertation study was completed to explore the processes by which sexual offending occurs, as well as the continuance of sex offending behaviors, within an integrative framework. The present study also sought to determine if the factors and temporal pathways involved in the prediction of sex recidivism may be adequately applicable to the prediction of a non-sex offense. Guided by elements of Ward & Beech's (2008) Integrated Theory of Sex Offending and Thakker and Ward's (2012) integrated theory of sexual reoffending, and using a sample of sex offenders released from New Jersey correctional facilities between 1990 and 2000, three structural equation models were developed and analyzed. Model 1 assessed the impact of offender characteristics on the prediction of an initial sex offense, while also testing the pathways between these characteristics and the outcome to determine if they exist as hypothesized. Model 2 evaluated the impact of both offender characteristics and aspects of the initial sex offense in the prediction of a sexual reoffense; it also assessed the temporal pathways between these factors and the outcome. Finally, Model 3 extended the variables used in Model 2 to predict an outcome of non-sex reoffending to determine if the same processes and pathways are useful in risk prediction for general reoffending. In total, six specific research questions were explored. The findings related to each research question will be discussed individually, followed by a general discussion of the study results within the context of the extant literature.

Research Question 1A: *Are three factors, composed of offender ecological, neuropsychological, and clinical characteristics, suitable to predict the type of initial sex offense of conviction within the current sample?*

The results of the exploratory factor analysis (EFA) for Model 1 initially indicated that the extraction of four factors was sufficient to explain the intercorrelations between the tested observed variables. A closer look at the factor loadings revealed that some variables did not meet the researcher-set retention guideline (i.e., factor loading > 0.298). When such variables were dropped from the analysis, this left only two viable factors. Each factor was composed of variables that tended to relate to either offender historical/demographic characteristics (DEM; i.e., family in criminal justice system, education level, marital status, number of years of employment, juvenile non-sex offense on record) or offender criminal history (CRM; i.e., substance abuse, prior number of violent, property, and drug crimes). Further examination of the factors during respecification of Model 1 revealed that the exclusion of the variable of juvenile non-sex offense on record for the factor DEM contributed to increased model fit. In conclusion, the originally hypothesized extraction of three factors (composed of offender ecological, neuropsychological, and clinical factors) did not materialize within the present dataset; rather, a simplified two-factor extraction consisting of indicators in totality was deemed to be more suitable.

Research Question 1B: *Do Model 1's proposed pathways for initial sex offending fit the current data? That is, do ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, leading to a prediction of the initial sex*

offense? Additionally, do all latent factors have a direct influence on the initial sex offense outcome?

As it was determined that two latent factors fit the current dataset best, it could not be determined if ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms, leading to a prediction of the initial sex offense, nor if all of the proposed latent factors had a direct influence on the initial sex offense outcome. Rather, the relationships and pathways between the *a posteriori* exogenous and endogenous variables in the model were tested. Based on the respecified model that provided the best fit to the data, the factor DEM was found to be predictive of the factor CRM; specifically an increase in an offender's factor score on DEM subsequently increased an offender's factor score on CRM. Additionally, both DEM and CRM were directly predictive of initial sex offense type, in that an increase in offender factor score for DEM and CRM resulted in an increase in the predictive probability that rape was the initial sex offense committed. Interestingly, the effect of the demographic factor on initial sex offense type, as mediated by the criminal history factor, was non-significant. Such findings have important implications, in that both factors and related variables should be considered separate of one another when studying sex offending typology. This finding will be discussed more in depth in the next section.

Research Question 2A: *Are four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, suitable to predict a sexual reoffense within the current sample?*

Similar to Model 1, the results of the EFA for Model 2 indicated a large departure from the *a priori* models presented in Chapter 3. Furthermore, although the extracted

latent factors in Model 1 loaded somewhat neatly onto two constructs related to offender

demographic and criminal history characteristics, this was not the case for Model 2.

Initial EFA indicated that three latent factors were found to best fit the data, and these

latent factors were poorly delineated and open to much interpretation. For simplicity,

researcher-assigned names for the constructs included Demographic Factor (DEM),

Criminal History/Mental Health Factor (CRM/MH), and Psychological Factor (PSY).

Eventually, the PSY factor was dissolved after CFA revealed that the offender treatment

level variable had a negative variance. This left two solid latent factors, DEM and

CRM/MH present within the analysis. Thus, the originally hypothesized extraction of

four factors did not materialize within the present dataset, and only two factors were

considered appropriate.

Research Question 2B: *Do Model 2's proposed pathways for sexual recidivism fit the*

current data? That is, do ecological circumstances impact neuropsychological factors,

which subsequently impact clinical symptoms and the initial sex offense, to predict sexual

recidivism? Additionally, do all latent factors have a direct influence on the initial sex

offense factor and the sexual reoffense outcome?

As four factors were not extracted for analyses, this particular research question

could not be sufficiently explored. However, the results of the model respecification

(which indicated this model to be the best fit for the data) revealed the presence of

significant pathways between the two latent variables and the observed variables of

offender denial of initial offense and offender sexual abuse victimization. The latent

factor DEM was related to the latent factor of CRM/MH in that a higher factor score on

DEM subsequently predicted a higher factor score on CRM/MH. A higher offender

factor score on CRM/MH increased the predictive probability of offender denial of initial offense. Interestingly, having a history of sex abuse victimization resulted in a decrease in the probability of offender denial of initial offense. When specifically looking at the outcome of interest for the model, an increase in DEM factor score was directly related to an increase in the likelihood of sexual recidivism during follow-up. Additionally, having a history of sex abuse victimization was related to an increase in the probability of committing a sexual reoffense. CRM/MH was not directly predictive of sex recidivism.

Although this model was important for illustrating many of the direct pathways in existence between the endogenous and exogenous variables, none of the indirect pathways tested were significant. This finding is particularly noteworthy as it highlights the necessity of independent analysis of factors related to sexual reoffending.

Research Question 3A: *Are four factors, composed of offender ecological, neuropsychological, and clinical characteristics, as well as circumstances of the initial sex offense, also suitable to predict a non-sex reoffense within the current sample?*

Provided that one objective of the present research was to determine the similarity of processes and predicted pathways between sexual and non-sexual reoffending, the results of the EFA for Model 2 guided the CFA for Model 3. As noted under Research Question 2A, EFA indicated that three latent factors (i.e., DEM, CRM/MH, and PSY) were found to best fit the data. Thus, these three latent factors were initially utilized within the structural analysis of Model 3 predicting non-sex recidivism. However, the PSY factor was dissolved after CFA again revealed that the offender treatment level variable had a negative variance, and only two latent factors remained in the final respecifications of the model.

Research Question 3B: *Do Model 3's proposed pathways for non-sex recidivism fit the current data? That is, do ecological circumstances impact neuropsychological factors, which subsequently impact clinical symptoms and the initial sex offense, to predict non-sex recidivism? Additionally, do all latent factors have a direct influence on the initial sex offense factor and the non-sex recidivism outcome?*

Similar to the response to Research Question 2B, this particular research question could not be sufficiently explored as the four latent factors related to offender ecological, neuropsychological, clinical, and initial sex offense factors did not present during the EFA. The initial structural model revealed the presence of direct and indirect pathways between the extracted factors and the outcome of interest, though a respecification was completed after the presence of a negative variance for the offender treatment level indicator, as noted. This respecification tested the inclusion of offender denial of initial sex offense and history of sex abuse victimization as separate observed variables within the model. The results of this respecification indicated a sufficient lack of improved model fit and many non-significant direct pathways between these two variables and the latent factors. A second respecification that eliminated these two observed variables altogether resulted in improved model fit, as well as direct and indirect pathways between the latent factors and the outcome. An increase in offender DEM factor score was related to an increase in offender CRM/MH factor score. Also, an increase in offender factor scores for both DEM and CRM/MH resulted in an increase in the probability of a non-sex reoffense during the follow-up period. Finally, the indirect effect of DEM on the occurrence of a non-sex offense through CRM/MH was significant, providing evidence

that a combination of factors may account for the occurrence of non-sex offense after an initial sex offense has been committed.

Sex Offending, Integrative Frameworks, and Research Implications

The present study is the first known empirical test of an integrative framework in the prediction of sexual offending and reoffending. Limited support was found for the usefulness and real-world application of broad and comprehensive theoretical frameworks in the prediction of sex offending and reoffending outcomes. Although it was hypothesized that numerous offender and offense attributes are interconnected in the prediction of a sex offense, results of *a posteriori* structural models indicate that only few latent factors and observed variables were likely to have an influence on the outcome of interest. Further, these effects are direct, as significant indirect pathways were nonexistent in the present analyses.

In the prediction of initial sex offense type, respecified Model 1 provided the best fit to the current dataset. Results revealed that higher factor scores for the demographic and criminal history latent factors were independently associated with an increase in the predicted probability of an offender having rape as the initial sex offense conviction; demographics were not found to indirectly affect initial sex offense type through criminal history. For the prediction of a sexual reoffense, results again revealed that demographics directly impacted both the criminal history factor and the outcome separately, and no indirect effects were significant. These findings provide evidence that the prediction of sexual offending and reoffending is better achieved by focusing on the direct influence factors have on sex offending, rather than focusing on the relationships and interactions between factors and the outcome. To this end, the continued use of

actuarial risk assessments is supported. Actuarial instruments are typically scored

through a review of an offender's individual static and dynamic risk factors; the results

are summed and a prediction of risk is provided based on the offender's total score.

Although quite simple in nature, the accuracy of actuarial instrumentation in risk

prediction over clinical judgment is well-supported (e.g., Ægisdóttir et al., 2006;

Bengtson & Långström, 2007; Grove & Meehl, 1996; Grove, Zald, Lebow, Snitz, &

Nelson, 2000), and the instruments can be useful in providing release decisions for

corrections and community supervision agencies as well as determining treatment

provisions. As such, the real-world applicability in studying factors independently

related to sexual offending is not to be overlooked.

In a similar vein, the results of the present study provide evidence of the role of

static offender attributes in sex offending. It is noteworthy that the latent factors most

predictive of a sexual reoffense were mainly composed of indicators that were static in

nature, rather than dynamic. The role of static characteristics in the prediction of sexual

recidivism is well known (e.g., Hanson & Bussière, 1998; Hanson & Morton-Bourgon,

2005). It is thus of little surprise that static factors have a dominant presence within

commonly-scored actuarial instrumentation and that static-only risk assessments (e.g., the

Rapid Risk Assessment of Sexual Offense Recidivism [RRASOR; Hanson, 1997], the

Static-99 [Hanson & Thornton, 1999], and Static 2002 [Hanson & Thornton, 2003]), have

received much attention for their predictive validity in determining risk for sexual

reoffending (e.g., Bengtson & Långström, 2007; Ducro & Pham, 2006; Sjöstedt &

Långström, 2001; Stadtland, Hollweg, Kleindienst, Dietl, Reich, & Nedophil, 2005).

Interestingly however, the present study provides evidence that static factors may also

prove useful when creating a simplified offender typology profile. For example, typologies of rapists and child molesters are quite complex and numerous (e.g., Knight & Prentky, 1990), and often include characterizations such as "high/low fixation" or "instrumental/aggressive anger." Although informative, this terminology has little applicability in criminal justice agency work outside psychological and/or treatment settings. Further, such designations are tedious and difficult to obtain. Rather, the variables included within the present study used to predict initial sex offense conviction type are those which can typically be found quite easily in a file review and are more accessible for persons who can benefit greatly from a simplified typology (e.g., law enforcement and correctional officers, case managers, community supervision agencies).

Finally, the results of the present study provide for clarifications regarding the impact of certain offender attributes on sexual recidivism. As noted in Chapter 2, offender denial/minimization of crimes and the role of sexual abuse victimization in subsequent reoffending are debated within the literature. The current findings indicate that offender denial of the initial offense is not related to sexual recidivism, thus supporting the results of meta-analyses (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). Sexual abuse victimization was related to sexual recidivism, in that having a history of victimization increased an offender's likelihood for committing a sexual reoffense. This finding, coupled with results indicating that static offender demographic characteristics are related to initial sex offending and the occurrence of sexual reoffending, is reminiscent of more basic theories of sex offending etiology, namely psychosocial theories, which hypothesize that sexually deviant behavior is a response to factors external to the individual, and that a connection exists between these

factors and individual psychological processes. Although these theories were not designed to explain the reoccurrence of sexual offending, but rather the development of behaviors only, they may aid in a more complete understanding of sexual recidivism. Further exploration into such theories is needed. Regardless, the results denote the importance of highlighting offender demographic and historical characteristics and the continued collection of such factors by criminal justice agencies.

General Offending, Integrative Frameworks, and Research Implications

Though the present study found limited support for the utilization of an integrative framework in the prediction of sex offending and reoffending, it appears that a more all-inclusive approach to the study of general reoffending may be warranted. This conclusion is based upon the finding of significant direct and indirect effects of variables within the hypothesized model. While higher factor scores for the demographic and criminal history latent factors were independently associated with an increase in the predicted probability of non-sex reoffending (similar to the results for the sex offending models), demographics were also found to indirectly affect the likelihood of a non-sex reoffense through criminal history. This discovery has implications that general recidivism among sex offenders may be the consequence of a number of factors occurring concomitantly or sequentially, rather than one or two factors operating in isolation of one another. However, it must be noted that although a history of sex abuse victimization was predictive of a sexual reoffense outcome within this sample, it was not predictive of a non-sexual reoffense.

What is most striking about the results of the present analysis is the number of offenders who recidivated with a non-sex crime: nearly 52% of the sample had an arrest

on record for a non-sexual offense within the follow-up period. In comparison, only 10% of the sample was rearrested for a sex reoffense. Such findings support the notion that sex offenders are not sex-specific criminals, and that they likely have risks and needs that are comparable to those of general offenders. Similarly, the results of the EFA were quite unexpected. While it was initially hypothesized that the factor extraction for Models 2 and 3 would reveal four tidy and independent constructs related to offender environmental, neuropsychological, clinical, and initial sex offense characteristics, this was not the case. Rather, the extraction of three factors suited the data best, and the categorization of these three factors was open to much interpretation. Despite the fact that the factor loadings may have had an effect on the final model results (to be discussed in Chapter 7), the factor extraction sheds light on the possible interrelatedness of the indicators used; specifically, indicators that may be perceived as measuring one specific type of underlying construct may actually be measuring a different one. Further, connections may exist between indicators that seem otherwise inexplicable. What is evident, however, is that some indicators of criminality are quite reliable predictors across initial offending and reoffending outcomes, and between sexual offending and non-sexual offending outcomes. For example, indicators measuring the more traditional and reliable predictors of criminality and recidivism (those related to age, criminal history, family factors, social achievement, companions, and substance abuse [see Gendreau et al., 1996, for a review]), were consistently present in all three tested models (i.e., family involvement in criminal justice system, substance abuse, prior offenses, marital status, and number of years of employment). Their importance in risk prediction is immeasurable, and should continue to be utilized in sex- and non-sex-specific research.

CHAPTER 7

Limitations and Directions for Future Research

There are known limitations to the present dissertation study. The following chapter outlines these limitations and provides suggestions for future research in this area. The generalizability of the results is also discussed.

Though secondary data analysis has many advantages, there are also certain disadvantages that must be acknowledged. The dataset used within the present study was of high quality. However, the dataset was quite large and contained a breadth of information; thus, determining how to decrease the original dataset into a manageable subset of variables for the present analysis proved difficult. In the majority of instances, categorically coded variables with various values were transformed into dichotomous variables, potentially losing much of the initial value of the measure. Additionally, some variables that would have been more efficiently analyzed as continuous variables were only available at the ordinal or nominal measurement-level within the original dataset. To resolve these issues, Mplus statistical software was specifically chosen over other statistical packages given its ability to model structural equations with both categorical indicators and outcomes. However, the utilization of categorical variables in data analysis has known limitations, namely, lack of precision of estimates and occasional ambiguity in conclusions. It is possible that the sole use of continuous measures in the present analysis, instead of a mix of categorical and continuous variables, would have led to slightly different findings and conclusions. For example, as noted in Chapter 6, the results of the exploratory factor analyses were quite surprising, given that indicators did not load onto specific constructs as initially hypothesized. Such findings may have

occurred due to the presence of categorical indicators. It is therefore recommended that future structural equation modeling analyses in this area employ continuous variables.

Similarly, there were instances in which there was a lack of variables available that relate to the theories of study. While many of the clinical variables hypothesized to be related to sexual offending were present in the dataset and included in the present analysis, many variables that would otherwise measure neuropsychological processes (e.g., cognitive distortions, impulsivity) and biological processes were absent. The data from which the current study was derived were not collected for such means, and thus, this was expected. At this time, it is believed that the addition of variables related to these constructs may have altered the factor loadings of variables, specifically in regards to Models 2 and 3. It is recommended that future research studying integrative frameworks, and specifically research utilizing latent constructs and/or structural analyses, include larger pools of indicators to sufficiently determine factor loadings and aid in the creation of additional continuous latent constructs.

The present study utilized data gathered from official records as determinants of criminal behaviors; this practice is inherently problematic. For sex offending outcomes specifically, it has been well established that sex offenses are underreported and that records underestimate actual behavior (Furby, Weinrott, & Blackshaw, 1989); as noted within Chapter 2, according to NCVS estimates, only 27% of rapes/sexual assault victimizations in 2011 were reported to police (Truman & Planty, 2012). For this reason, an arrest for a sex crime was deemed to be the best measure of sexual recidivism within the current sample, as it was generally more inclusive of sexually deviant behavior occurrence. Arrests were also utilized instead of convictions or incarcerations due to

their immediate nature of occurrence; unbeknownst to the present researcher, cases involving sex-offense specific crimes may have been pending at the end of the follow-up period and would be unaccounted for if a conviction was used as an outcome instead of an arrest. Despite this broadened terminology however, the percentage of offenders in the present sample who were rearrested for a new sex crime within the follow-up period was low at approximately 10% (n=46), whereas meta-analyses have found slightly higher sexual recidivism rates among sexual offenders within a similar follow-up time frame (13.4% [Hanson & Bussière, 1998]; 13.7% [Hanson & Morton-Bourgon, 2005]). Finally, it must also be noted that for criminological research more generally, the use of official records as determinants of criminal behavior may be plagued by the presence of human error.

The findings of the present study must be generalized with extreme caution. This study is the first known empirical test of an integrative framework in the prediction of sexual offending and reoffending. As such, additional research utilizing such frameworks is necessary, as are future explorations of the real-world applicability of integrative theories in practice. It is thus believed that the findings of the present study have increased usefulness as a guide for future research purposes only, and care should be taken when applying these findings to policy-related interventions.

Also of note is the current sampling frame. The sample included convicted sex offenders who were released from an adult state correctional facility after a stay of incarceration. As such, it does not include sexual offenders who received sentences of probation or other means, nor does it include juvenile sex offenders or persons civilly committed at the end of a sentence. At this time, it is unknown how the inclusion of such

offenders may have altered the present findings, nor how results may differ when studying very specific samples. For this reason, it is recommended that future analyses be completed using sex offender samples that vary in age and risk-level to that of the present study.

It is also recommended that future analyses take into consideration the effect of reincarcerations on time-at-risk during follow-up periods when predicting re-offending outcomes. The movement of offenders into and out of prison remains unaccounted for in the present analysis; specifically, the occurrence of sexual and non-sexual reoffenses were the outcome measures utilized, and persons who may have been unable to commit a reoffense because of a stay of incarceration during the follow-up period were included within the analyses, potentially coded as not committing a reoffense. This may also have contributed to the low rate of sexual reoffending. Unfortunately, it was impossible to discern exact time-at-risk elements using the present dataset, and the effects of reincarcerations on the results are unknown.

The findings from the present study are also unable to account for the processes involved in female sex offending and reoffending and non-sex recidivism more generally. Although most sex offending research is limited to male-only samples, many highly publicized instances of female sex offending (particularly in regards to teacher/student relationships) have focused attention on these offenders. The integrative frameworks described in the present study were initially designed to account for male sex offending only, and thus, female exclusion from the sampling frame was warranted. Nonetheless, the etiology of female sex offending behavior is quite interesting and remains largely unexplored as of this writing, specifically as analyzed within an integrative framework.

Finally, due to sample size limitations, many potential research questions could not be sufficiently analyzed, and the analysis of more complex structural equation models could not be completed. For example, although Model 1 tested for the prediction of an initial sex offense (categorized by a crime of conviction of child molestation or rape), it currently remains unknown how rapists and child molesters may have differed on the outcome of sexual recidivism, as a two-group model could not be tested. Additionally, potential treatment effects on sexual and non-sexual offending outcomes could not be sufficiently explored within the current sampling frame as the number of offenders who received treatment while incarcerated was limited (n=183). It is therefore recommended that future research exploring sex offending etiology employ larger sample sizes as to accommodate the power necessary to test many of these objectives utilizing higher-level structural equation modeling. Lastly, it would be quite interesting to utilize structural equation modeling to compare a sample of sex offenders with a sample of non-sex offenders to determine the similarities and differences among the groups in general offending etiology.

CHAPTER 8

Conclusions

The present dissertation study was completed to explore the processes by which initial sexual offending occurs, as well as the continuance of sex offending behaviors, within an integrative etiological framework. The study also examined if the factors and temporal pathways involved in the prediction of sex recidivism are similar to those involved in the prediction of a non-sex offense. Using elements of Ward & Beech's (2008) Integrated Theory of Sex Offending and Thakker and Ward's (2012) integrated theory of sexual reoffending, three structural equation models were developed and tested using a sample of sex offenders released from New Jersey correctional facilities. Model 1 assessed the impact of offender characteristics on the prediction of an initial sex offense, while also testing the pathways between these characteristics and the outcome to determine if they exist as hypothesized. Model 2 evaluated the impact of both offender characteristics and aspects of the initial sex offense in the prediction of a sexual reoffense; it also assessed the temporal pathways between these factors and the outcome. Finally, Model 3 extended the variables used in Model 2 to predict an outcome of non-sex reoffending to determine if the same processes and pathways are useful in risk prediction for general reoffending.

The results of the analyses provide limited support for the usefulness and real-world application of comprehensive integrative theoretical frameworks in the prediction of sex offending and reoffending. It was discovered that offender characteristics and criminal history factors tend to independently predict an initial sex offense or reoffense and do not maintain indirect effects on one another as hypothesized. However, these

results support the merits of actuarial risk assessment, particularly the use of static-only factors instrumentation. Additionally, the results provide support for the potential utilization of less complex integrative frameworks; further exploration is warranted.

For the prediction of a non-sex recidivism outcome, the results support the importance of exploring offending within an integrative framework. This conclusion is based upon the finding of significant direct and indirect effects of variables on the outcome, thus providing evidence that general recidivism among sex offenders may be the consequence of a number of factors occurring concomitantly or sequentially, rather than one or two factors operating in isolation of one another. Further, it was noted that some indicators of criminality are quite reliable predictors across initial offending and reoffending outcomes, and between sexual offending and non-sexual offending outcomes.

Although the present research has limitations, study findings do contain real-world implications. The continued usage of actuarial instrumentation in the prediction of sexual recidivism is necessary. The present findings also provide evidence of sex offenders' propensity to commit crimes outside of a sex-specific context. Future research within this arena is needed to explore sex and non-sex etiology among differing subsamples of sex offenders as well as in comparison to non-sex offending samples.

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5. **Ragusa-Salerno, L.M.,** & Zgoba, K.M. (2012). Taking stock of 20 years of sex offender laws and research: An examination of whether sex offender legislation has helped or hindered our efforts. *Journal of Crime and Justice, 35*(3), 335-355.

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