The Mediator Effect of Psychopathy between Pornography and Sadism

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Jia Liu

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ABSTRACT

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Graduate School of Arts and Sciences
Brandeis University
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By Jia Liu

This study tried to test the mediator effect of psychopathy between pornography and sadism, and investigate the difference of models between the sexual offenders and non-offenders. A total of 529 male adult sexual offenders and 170 community non-offenders were given the MASA version of 3,4,5 or 6. Factor analysis, mediator model, and MANOVA test were used to compare group differences. Results showed that pornography effects on sadism will be mediated by increased psychopathy among offenders in a criminal sample, and among males in a non-criminal sample under certain circumstances. Paraphilic coercive disorder was similar to sadism. Lack of perspective taking and self-centered impulsivity might be the key to distinguish individuals with sexual abuse propensity versus normal people.

Keywords: psychopathy mediator effect, sexual offender, pornography, sadism

TABLE OF CONTENTS

CHAPTER I

Introduction

Literature Review

Pornography and Sadism. Nowadays, pornography is used in various media, including video, magazines, and the Internet. There has been a significant increase in the Internet access to pornography, which is easier, cheaper, and more secret (Owens, Behun, Manning & Reid, 2012). Exposure to online pornography has been found to be strongly associated with sexual behavior and sexual attitudes (Lo &Wei, 2005).

It has been hypothesized that 'high risk' people who are high on rape tendencies are affected more by pornography and are at higher risk of becoming more sexually aggressive (Malamuth & Huppin, 2005). Among low empathy males attraction to pornography and violence is even greater (Cumberbatch, 2011). In a pornography meta-analysis, Oddone-Paolucci et al. (2000) argued that compared with control groups, in rape prone individuals pornography may produce a 20-30% increase in the acceptance of rape as normal, in treating people as sex objects, in early age of first intercourse, and in coercive behavior. This study illustrated the negative effect of pornography and suggested that there might be some relation between pornography and sadism, but no further evidence was given. In another study sexual sadists responded to the cues of violence and injury more than non-sadists (Harris, Lalumière, Seto, Rice & Chaplin, 2012). In a longitudinal study sexual media exposure predicted early sexual behaviors (Kingston, Malamuth, Fedoroff & Marshall, 2009). Distinct from sadism, rapists responded more to non-consent sexual coercion (Knight, Sims-Knight & Guay, 2013).

In a meta-analysis study, pornography consumption has a significant positive correlation with violence attitude against women. Research on sex offenders indicates that sexual offenders' fantasies may predict their criminal behavior (MacCulloch, Snowden, Wood & Mills, 1983), and the findings lead to the conclusion that in sexual offending, sexual fantasies might play an important causal factor.

Pornography exposure is a common way to expanding sexual fantasies (Byrne & Osland, 2000), especially if it is self-initiated, such as search online, purchase videos or magazines. The definition of sexual fantasy includes various deviant behaviors, such as transvestism, sadism, bondage (Williams & Paulhus, 2004; Williams, Paulhus & Hare, 2007). In this study, we use MASA to test these fantasies. The existence of negative effect of extreme pornography on people who access it is mentioned in a review, and may leads to rape plan and further sexual offence behavior (Itzin, Taket & Kelly, 2007). It is suggested that pornography use is highly associated with sexual aggression, especially the relationship between the availability of pornography materials and the fluctuated sexual crime rate in a society (Vega &Malamuth, 2007).

There is evidence that pornography stimulates the conversion of sexual fantasy to offence plan behavior, but it is possible that pornography causes sadistic behavior, which then encourages pornography use (Williams, Cooper, Howell, Yuille & Paulhus, 2009). Again, it is possible that sadistic fantasies encourage pornography use, which then promotes delinquent sexual behaviors. Most correlations between media and sexual aggression do not indication clear direction, and it is indicated that the relationship between pornography and aggressive behavior might be illustrated by a circular connection (Malamuth & Huppin, 2005).

Pornography and Psychopathy. Experimental studies have confirmed that pornography exposed to male participants may boost rape willingness and aggression towards female (Allen,

D'Alessio & Brezgel, 1995; Malamuth, Addison, Koss, 2000). In sum, pornography affects both attitudes and behaviors.

In Simons' study, college students exposed to pornography material and corporal punishment in the family are at higher risk of performing coercive sexual behavior (Simons, 2012). The result indicates the family violence and pornography use have the negative impact among nonclinical sample.

There is evidence that early pornography exposure and frequency of pornography use are not predictors of compulsivity, which indicates that pornography is not the cause of coercion but a symptom (Štulhofer, Jelovica & Ružić, 2008).

In our studies, we found that sexual drive, preoccupation, and compulsivity were highly correlated with each other and in turn were correlated with pornography use, expressive aggression toward women, sadism, pervasive anger, and offense planning for both adult and juvenile sexual offenders (Knight, 1999; Knight & Cerce, 1999).

Psychopathy and Sadism. In a literature review, a lot of rapists were tested and the results showed the important role of cognitions, which include beliefs of sex, appropriate masculinity, and sexual scripts including fantasies and offence plans (Ryan, 2004). In a large study with sexual abusers and non-sexual offenders, because no relationship between psychopathy and sexual aggression was found, the conclusion of moderating effect of psychopathy between pornography and aggression was invalid (Burton, Leibowitz, Booxbaum, & Howard, 2011). According to a recent study, pornography exposure may not be associated with the willingness of risky sexual behaviors (Luder, et al., 2011).

Besides, there is also evidence between psychopathy and sadistic behavior in neuroscience. Individuals with higher sadistic preferences tend to exhibit more coercive fantasies

and behavior (Knight et al., 2012; Harris et al., 2012; Seto et al., 2012). Schiffer et al. (2007) found evidence that suggested that the sexual compulsion may change the anatomy of the brain and contribute to an individual's addiction to sexual activities. Addicts may reduce the activity of specific brain area that take charge of the decision making and control the impulsivity. People with injuries of this part will have poor inhibition of aggressive behavior (Fowler, et al., 2007).

This research will focus on non-offender group and sex offender group with criminal history. Are sexual behavior and fantasy related with pornography use? If that exists, is that relationship mediated by psychopathy? Is there any difference between the offender and non-offender groups?

Statement of Hypotheses

The following hypotheses are proposed:

1. Pornography use will be significantly related to psychopathy in a criminal sample.

2. Psychopathy will be highly associated with sadistic fantasy and behavior in this criminal sample.

3. Pornography effects on sadism will be mediated by increased psychopathy among offenders in a criminal sample and among males in a non-criminal sample.

4. Differences in the mediator effects will emerge between the criminal sample and non-criminal sample.

CHAPTER II

Method

Participants

Criminal sample. A total of 529 adult sex offenders, with age range from 20 to 68 years old ($M = 38.98$, $SD = 10.436$). Among these offenders, 71.2% are Caucasian, 17.0% are African-American, 4.2% are American Indian, 4% are Hispanic, 3.6% are others. Because all the sadism fantasy and behavior is more prevalent among males comparatively, so all the participants in this study are restricted to males. More than half (54%) of the offenders were arrested less than five times, 96.5% of them were sent to prison or juvenile home.

Non-criminal sample. A total of 170 community adult males, with age range from 17 to 74 years old ($M = 35.20$, $SD = 12.678$). Among these adults, 96.5% are Caucasian, 3.5% are others. They are all males. More than half (62.9%) of the community participants have no arrested history, around 20.6% of them were arrested once between the age of 15 to 18, but they were never adjudicated for crimes.

Materials

Criminal sample. Pornography use scale. Pornography was measured via the Multidimensional Assessment of Sex and Aggression (the MASA). This well-validated questionnaire is used to measure respondents' experience and attitudes towards the use of pornography. There are five aspects tested, one scale is focusing on childhood exposure to pornography, another one scale investigates the violent pornography use in materials. The other three scales focus on the pornography materials with children, women and men separately. The items are rated on 0 to 5 point scale, which indicate that the degree to each of the item. 0 means

never used specific pornography, 3 means sometimes use of the porn, 5 means almost every day use of the certain pornography style. For example, in early exposure to pornography scale, respondents with high score on this scale were exposed to materials including X-rated movies, sex acts between adults, and nude women during their childhood.

After doing the exploratory factor analysis with an oblique rotation, five principal components were extracted for the pornography items. Specifically, the five principal named: early exposure to pornography, conventional heterosexual pornography, violent pornography, homosexual pornography, child pornography. From the KMO and Bartlett's test result, KMO = .889>.6, $\chi^2(435) = 13754.440$, $p <. 001$, thus the items indeed correlate with each other and worth to do the factor analysis. The minimum Initial Eigenvalue is bigger than 1. From the scree plot test, it also shows five principal components extracted. The proportion of variance accounted for 65.752% of the total variance. The scale reliability of the total scale is $\alpha = .933$, which means all the 30 items measure the same construct. If any of the items deleted, the overall reliability will decrease, so the 30 items can be treated as one scale. For specific items and pattern loading of factors, please see Table 1 to Table 6. For the sub-scale reliability, please see Table 7.

Psychopathy. The checklist was based on Hare's Psychopathy Checklist-Revised (PCL-R) (Hare, 2003), and it is perceived as the standard method to assess psychopathy (Hare, 2007). The psychopathy-related items were from Versions 3, 4, 5, and 6 of the MASA. Because more psychopathy items were added to Version 4 and the community sample had been administered only Version 3 of the MASA, there are minor difference between the criminal and non-criminal data. The MASA scales didn't intend to measure all aspects of psychopathy, but to focus on the behavior and cognition result in certain aspects. The summary of the whole process can be found

in Knight's study (Knight & Guay, 2006). The whole scale has 27 items, with the point of each ranges from 0 to 4, zero means the item doesn't fit for the respondents, and four means the item fits very well. Basically, there are four facets (Knight & Guay, 2006) of psychopathy related to this study: the impulsivity scale, report participants' act on impulse, moodiness, and losing of control; the conning and superficial charming scale, describe the respondents behavior of conning and manipulating others by telling a lie, taking advantage or charming others into doing what they want; the lack of perspective taking scale, report participants' exposing themselves with strong urges, and having difficult to see from others view; lack of empathy scale, reports engaging in voyeurism with strong urge (Knight, Prentky & Cerce, 1994; Knight & Cerce, 1999).

In this study, there are four major components extracted from the psychopathy items in the MASA after the exploratory factor analysis. The proportion of variance accounted for 39.667% of the total variance, and the α for the whole scale with 27 items is 0.827. In reliability analyses of the psychopathy factors, the deletion of three lack of empathy items increased Cronbach's alpha. The correlation between lack of empathy scale and impulsivity scale ($r = $ -0.061, $p = .159>.05$), conning/superficial charm scale ($r = $ -0.051, $p = .246>.05$) are very low. Previous research (Benning, Patrick, Hicks, Blonigen & Krueger, 2003) indicated that impulsivity, lack of perspective taking and conning/charming scales (which belong to callous manipulativeness) map well onto the PPI Self-Centered Impulsivity factor, which comprises impulsive non-conform, carefree non-planfulness and Mach egocent scales (which belong to self-centered impulsivity). And at that time, we didn't come up with the scale of hostility towards women, which later shows it map well on blame external scale. But lack of empathy scale doesn't map on any of four factors in self-centered impulsivity scale. Based on the theory background and the scale

correlation result, the lack of empathy scale will be removed from psychopathy scale in the future study.

There were three principal components extracted after deleting the lack of empathy scale, from the exploratory factor analysis, KMO and Bartlett's test result shows $Det = .000$, thus the items might have some collinearity. According to Flora's self-control factor analysis (Flora, Finkel & Foshee, 2003), impulsivity is self-centered features; and according to Schrum's psychopathy checklist (Schrum & Salekin, 2006), conning and charming are also self-focused behavior features. Thus, the impulsivity and conning/charming scale may cause the collinearity of the psychopathy scale. But the perspective taking is not highly correlated with self-centered impulsivity. Thus, the impulsivity and conning/charming two scales were combined as one category. Again, from the exploratory factor analysis, the KMO and Bartlett's test result indicate $Det = .002$, KMO $= .867 > .6$, $\chi^2(171) = 3120.727$, $p < .001$, which means it worth to do the factor analysis. In an oblique analysis, two principal components were extracted, one is named lack of perspective taking, the other one is named self-centered impulsivity, and the proportion of variance accounted for 33.678% of the total variance. The reliability for the total scale is 0.851.

Sadism. Sadism was measured on sadistic behaviors and sadistic fantasies. More specific, sexual fantasy scale measured the arousal of scaring, humiliating or hurting women thoughts during sex, while sexual behavior scale measured real act of scaring, humiliating, or hurting women during sex. Since there were high correlations between sadism score and aggressive fantasies and behaviors, respondents with high sadism score also have the preference of performing paraphilias, using more pornography material, and planning sexual offenses (the MASA; Knight & Cerce, 1999). It is indicated that Paraphilic Coercive Disorder (PCD) is not extremely distinct from sadism, it represents a lower level of sadistic fantasy and behavior

(Knight, Sims-Knight & Guay, 2013). Thus, according to the relationship between PCD and sadism, PCD scale was also included for further research.

For the sadism scale exploratory factor analysis, the KMO and Bartlett's test result shows that KMO = .910, χ^2 = 4601.426, df = 105, $p < .001$, thus the items indeed correlate with each other and worth to do the analysis. In an oblique analysis, two principal components were extracted. The minimum initial eigenvalue is bigger than 1.3. The proportion of variance accounted for 51.690% of the total variance.

Non-criminal sample. The questionnaire used for non-criminal participants were the same as the criminal participants, but the exploratory factor analysis result for pornography, psychopathy and sadistic have small differences.

In the pornography exploratory factor analysis, the KMO and Bartlett's test result indicated KMO = .819>.6, χ^2(378) = 3052.173, $p < .001$, thus the items indeed correlate with each other and worth to do the factor analysis. In an oblique analysis, I can extract five principal components which are meaningful. The minimum initial eigenvalue is bigger than 1.5. From the scree plot test, it also shows five principal components were extracted. The proportion of variance accounted for 56.011% of the total variance.

In the psychopathy exploratory factor analysis, the scale of lack of empathy will be deleted from future study as previously mentioned, and the lack of perspective taking and conning/charming scales will be combined together as self-centered impulsivity scale. From the KMO and Bartlett's test result, Det = .001, KMO = .874>.6, χ^2(153) = 1077.436, $p < .001$, which means it worth to do the factor analysis. In an oblique analysis, two principal components were extracted which are meaningful. The proportion of variance accounted for 38.714% of the total variance.

From the sadism exploratory factor analysis, the KMO and Bartlett's test result, KMO $= .793$, $\chi^2 = 937.645$, $df = 105$, $p < .001$, thus the items indeed correlate with each other and worth to do the analysis. In an oblique analysis, I can extract two principal components which are meaningful. The minimum initial eigenvalue is bigger than 1.3. From the scree plot test, it also shows two principal components extracted. The proportion of variance accounted for 47.512% of the total variance.

Procedure

The participants were voluntarily to attend the study and answer the questionnaire, and there are two samples, one is adult sexual offenders sample and the other one is community control sample. Both of the two samples were given the MASA (Knight, Prentky & Cerce, 1994; Knight & Cerce, 1999) version of 3,4,5 or 6. The procedures were approved by Brandeis University Institutional Review Board. The community control group were given the paper and pencil version of the MASA.

Analysis

Different kinds of pornography scores were generated by summing the scores on items in each of the pornography subscale and calculating the average score. The subscale and total scale reliability were calculated. Psychopathy and sadism, PCD scores were calculated with the same method.

The indirect mediator effects were tested by Preacher's multiple mediational analysis macro embedded in SPSS (Preacher, Hayes, 2008). The direct effect and total effected can be compared at the same time and decide the mediator effect.

CHAPTER III

Results

Mediator effect of Psychopathy

In both of the criminal and non-criminal sample, the direct effect of child pornography on sadism and PCD were non-significant. At the same time, the mediator effects of psychopathy between the child pornography and sadism were non-significant. For specific index, please refer to Table 8 and Table 9. There were studies supported the idea that child molesters and rapists have different criminal behaviors, development tracks, and clinical profiles (Hamdi, Knight, 2012). Thus, it is reasonable that distinct models may apply to map the rapists and child molesters, who are both sexual abusers.

The other four kinds of pornography related models were quite different between criminal sample and non-criminal sample, thus I will illustrate them separately in the following paragraphs.

Criminal Sample

It was predicted that two facets of psychopathy (self-centered impulsivity and lack of perspective taking) would mediate the relation between pornography and sadism.

Taken as a set, self-centered impulsivity and lack of perspective taking did mediate the effect of early exposure to pornography and sadistic fantasy. Over all the model was a significant predictor of sadistic fantasy, $F(3,524) = 34.670$, $p < .001$ (see Table 10 and Table 11), and accounted for 16.56% of the variance ($R^2 = .1656$). Early exposure to pornography was a significant predictor of the self-centered impulsivity ($\beta = .144$, SE =. 031, $p < .001$). It was also a significant predictor of the lack of perspective taking ($\beta = .118$, SE =. 040, $p = .004 < .01$). This

indicated that holding everything else constant, one unit change in early exposure to pornography use will on average lead to .144 unit increase in self-centered impulsivity score, and lead to .118 unit increase in lack of perspective taking score. The direct effect of self-centered impulsivity to sadistic fantasy was significant ($\beta = .268$, SE $= .037$, $p < .001$), the direct effect of lack of perspective taking to sadistic fantasy was significant ($\beta = .075$, SE $=. 028$, $p < .01$).

The direct effect of early exposure pornography to sadistic fantasy was also significant ($\beta = .070$, SE $= .025$, $p < .01$). The total effects of early exposure to pornography on sadistic fantasy through the facets of psychopathy was significant ($\beta = .118$, SE $= .027$, $p < .001$). This indicated the incomplete mediator effect of psychopathy, and there might be other mediators between early exposure to pornography and sadistic fantasy. The difference between the total and direct effects is an estimate of .047, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .026 to.074, this claimed that the difference between the total and the direct effect of early exposure pornography to sadistic fantasy is different from zero. Similarly, the incomplete mediator effect of psychopathy was confirmed between early exposure to pornography and sadistic behavior, between early exposure to pornography and PCD.

The direct effect of early exposure pornography to sadistic behavior was significant ($\beta = .091$, SE $= .027$, $p <.01$). The total effects of early exposure to pornography on sadistic behavior through the facets of psychopathy was significant ($\beta = .146$, SE $= .029$, $p < .001$). The difference between the total and direct effects is an estimate of .055, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .031 to .083, this claimed that the difference between the total and the direct effect of early exposure pornography to sadistic behavior is different from zero.

The direct effect of early exposure pornography to PCD was significant ($\beta = 0.163$, SE = .047, $p < .01$). The total effects of early exposure to pornography on PCD through the facets of psychopathy was significant ($\beta = .267$, SE = .051, $p < .001$). The difference between the total and direct effects is an estimate of .104, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .057 to .155, this claimed that the difference between the total and the direct effect of early exposure pornography to PCD is different from zero.

For the conventional heterosexual pornography, there were similar incomplete mediator effects tested. The direct effect of conventional heterosexual pornography to sadistic fantasy was significant ($\beta = 0.113$, SE = .024, $p < .001$). The total effects of conventional heterosexual pornography on sadistic fantasy through the facets of psychopathy was significant ($\beta = .178$, SE = .024, $p < .001$). The difference between the total and direct effects is an estimate of .065, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .044 to .093, this claimed that the difference between the total and the direct effect of conventional heterosexual pornography to sadistic fantasy is different from zero.

The direct effect of conventional heterosexual pornography to sadistic behavior was significant ($\beta = 0.139$, SE = .026, $p < .001$). The total effects of conventional heterosexual pornography on sadistic behavior through the facets of psychopathy was significant ($\beta = .212$, SE = .026, $p < .001$). The difference between the total and direct effects is an estimate of .073, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .050 to .101, this claimed that the difference between the total and the direct effect of conventional heterosexual pornography to sadistic behavior is different from zero.

The direct effect of conventional heterosexual pornography to PCD was significant ($\beta = 0.266$, SE $= .044$, $p < .001$). The total effects of conventional heterosexual pornography on PCD through the facets of psychopathy was significant ($\beta = .402$, SE $= .045$, $p < .001$). The difference between the total and direct effects is an estimate of .136, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .098 to .184, this claimed that the difference between the total and the direct effect of conventional heterosexual pornography to PCD is different from zero.

For violent pornography, there were also similar incomplete mediator effects confirmed.

The direct effect of violent pornography to sadistic fantasy was significant ($\beta = 0.256$, SE $= .029$, $p < .001$). The total effects of violent pornography on sadistic fantasy through the facets of psychopathy was significant ($\beta = .313$, SE $= .031$, $p < .001$). The difference between the total and direct effects is an estimate of .053, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .033 to .084, this claimed that the difference between the total and the direct effect of violent pornography to sadistic fantasy is different from zero.

The direct effect of violent pornography to sadistic behavior was significant ($\beta = 0.365$, SE $= .030$, $p < .001$). The total effects of violent pornography on sadistic behavior through the facets of psychopathy was significant ($\beta = .426$, SE $= .031$, $p < .001$). The difference between the total and direct effects is an estimate of .061, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .038 to .093, this claimed that the difference between the total and the direct effect of violent pornography to sadistic behavior is different from zero.

The direct effect of violent pornography to PCD was significant ($\beta = 0.498$, SE $= .054$, $p < .001$). The total effects of violent pornography on PCD through the facets of psychopathy was

significant ($\beta = .621$, SE $= .058$, $p < .001$). The difference between the total and direct effects is an estimate of .124, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .069 to .184, this claimed that the difference between the total and the direct effect of violent pornography to PCD is different from zero.

The mediator models and data results are pretty similar for early exposure to pornography, conventional heterosexual pornography and violent pornography. The mediator effects were incomplete for these three kinds of pornography. Besides, there were no difference between sadistic behavior, sadistic fantasy, and PCD, which indicated that PCD might have some correlation with sadism in certain degree. Because the two facets psychopathy (self-centered impulsivity and lack of perspective taking) are all significant related to the pornography and sadism, I will not talk about the specific number in the following discussion, for specific Beta, SE and p value, please refer to Table 10 and Table 11.

Homosexual pornography is a little bit difference, and I'll illustrate this later.

The direct effect of homosexual pornography to sadistic fantasy was non-significant ($\beta = 0.037$, SE $= .026$, $p = .165 > .05$). The total effects of homosexual pornography on sadistic fantasy through the facets of psychopathy was significant ($\beta = .086$, SE $= .028$, $p < .01$). The difference between the total and direct effects is an estimate of .049, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .027 to .076, this claimed that the difference between the total and the direct effect of homosexual pornography to sadistic fantasy is different from zero.

The direct effect of homosexual pornography to sadistic fantasy was non-significant ($\beta = 0.018$, SE $= .029$, $p = .537 > .05$). The total effects of homosexual pornography on sadistic

behavior through the facets of psychopathy was significant (β = .075, SE = .031, p = .015<.05). The difference between the total and direct effects is an estimate of .057, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .033 to .089, this claimed that the difference between the total and the direct effect of homosexual pornography to sadistic behavior is different from zero.

The direct effect of homosexual pornography to PCD was non-significant (β = -.021, SE = .049, p = .667>.05). The total effects of homosexual pornography on PCD through the facets of psychopathy was non-significant (β = .088, SE = .054, p = .102>.05). There was neither direct effect nor mediator effect from homosexual pornography to PCD, which indicated there might be difference between sadism and PCD when talk about homosexual pornography.

Non-criminal sample

Compare with the criminal sample, the non-criminal sample has the direct effect between pornography and sadism, between pornography and PCD. However, none of the mediator effect of lack of perspective taking exist in non-criminal sample, only a few mediator effect of self-centered impulsivity exist. All the mediator effects I'll mention below only have self-centered impulsivity as the mediator.

The direct effect of early exposure pornography to sadistic behavior was significant (β = .210, SE = .052, p < .001). The total effects of early exposure to pornography on sadistic behavior through the self-centered impulsivity was significant (β = .250, SE = .055, p < .001). The difference between the total and direct effects is an estimate of .040, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .003 to .096, this claimed

that the difference between the total and the direct effect of early exposure pornography to sadistic behavior is different from zero.

The direct effect of early exposure pornography to PCD was significant ($\beta = .174$, SE $= .073$, $p = .012 < .05$). The total effects of early exposure to pornography on PCD through the self-centered impulsivity was significant ($\beta = .243$, SE $= .079$, $p < .01$). The difference between the total and direct effects is an estimate of .069, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .011 to .155, this claimed that the difference between the total and the direct effect of early exposure pornography to PCD is different from zero.

For the conventional heterosexual pornography model, the sadistic behavior and PCD have different functions, which indicate that the PCD is not absolutely the same as sadism. More specific, there might be "a single dimension Agonistic Continuum" related to PCD and sadism (Knight, Sims-Knight, Guay, 2013).

The direct effect of conventional heterosexual pornography to PCD was significant ($\beta = .336$, SE $= .080$, $p < .001$). The total effects of conventional heterosexual pornography on PCD through the self-centered impulsivity was significant ($\beta = .483$, SE $= .070$, $p < .001$). The difference between the total and direct effects is an estimate of .147, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .067 to .243, this claimed that the difference between the total and the direct effect of conventional heterosexual pornography to PCD is different from zero.

The direct effect of homosexual pornography to sadistic behavior was significant ($\beta = .428$, SE $= .130$, $p < .01$). The total effects of homosexual pornography on sadistic behavior through the self-centered impulsivity was significant ($\beta = .541$, SE $= .137$, $p < .001$). The

difference between the total and direct effects is an estimate of .113, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .007 to .250, this claimed that the difference between the total and the direct effect of homosexual pornography to sadistic behavior is different from zero.

There was only one complete mediator model among non-criminal sample, and I'll illustrate this unique one here. The direct effect of homosexual pornography to PCD was non-significant ($\beta = .317$, SE $= .182$, $p = .083 > .05$). The total effects of homosexual pornography on PCD through the self-centered impulsivity was significant ($\beta = .511$, SE $= .196$, $p = .010 < .05$). The difference between the total and direct effects is an estimate of .194, and a 95% Bias corrected and accelerated confidence intervals (BCa) bootstrap CI of .011 to .406, this claimed that the difference between the total and the direct effect of homosexual pornography to PCD is different from zero.

MANOVA of Differences Between Criminals and Non-criminals

In order to compare multiple differences between the criminal group and the non-criminal group subjects response at the same time, multivariate analysis of variance (MANOVA) was used. MANOVA offers some advantages over ANOVA, including the improvement of the power, the reduction of the type I error, and the ability to test multiple factors of an issue at the same time (Kuntsche, 2001).

From testing the box's test of equality of covariance matrices, $p < .001$, the null hypothesis was violated, and indicated that there is difference for the between-subject effect. The reason for this might be the different sample size of the criminal and non-criminal sample, with 529 and 170 participants separately, and it is reasonable that the variance of 529 sample will be

bigger than the 170 sample. However, the multivariate test and the levene's test of equality of error variances showed the similar result, which indicated the validity of the MANOVA test.

Pornography. From the MANOVA test, the Pillai's Trace $\lambda = .082$, $F(5,689) = 12.300$, $p < .001$, partial $\eta^2 = 8.2\%$. Wilks' $\lambda = .918$, $F(5,689) = 12.300$, p $< .001$, partial $\eta^2 = 8.2\%$. Thus, the null hypothesis is rejected and it is concluded that there is difference between the criminal and non-criminal groups in pornography. From the separate univariate test result, four dependent variables contribute to the overall group difference: conventional heterosexual pornography ($F(1,693) = 11.106$, $p = .001$, partial $\eta^2 = .016$), violent pornography ($F(1,693) = 21.544$, $p < .001$, partial $\eta^2 = .030$), homosexual pornography ($F(1,693) = 33.862$, p $< .001$, partial $\eta^2 = .047$), child pornography ($F(1,693) = 13.756$, $p < .001$, partial $\eta^2 = .019$).

Psychopathy. From the MANOVA test, the Pillai's Trace $\lambda = .250$, $F(2,694) = 115.565$, p $< .001$, partial $\eta^2 = 25.0\%$. Wilks' $\lambda = .750$, $F(2,694) = 115.565$, $p < .001$, partial $\eta^2 = 25.0\%$. Thus, the null hypothesis is rejected and I conclude that there is difference between the criminal and non-criminal groups in psychopathy. More specifically, two dependent variables contributes to the overall group difference lack of perspective taking ($F(1,695) = 220.730$, $p < .001$, partial $\eta^2 = .241$), self-centered impulsivity ($F(1,695) = 42.018$, $p < .001$, partial $\eta^2 = .057$).

Sadism and paraphilic coercive disorder (PCD). From the MANOVA test, the Pillai's Trace $\lambda = .030$, $F(2,691) = 10.844$, $p < .001$, partial $\eta^2 = 3.0\%$. Wilks' $\lambda = .970$, $F(2,691) = 10.844$, $p < .001$, partial $\eta^2 = 3.0\%$. Thus, the null hypothesis is rejected and I conclude that there is difference between the criminal and non-criminal groups in sadism. In this study, two dependent variable contributes to the overall group difference: sadistic fantasy ($F(1,692) =$

15.127, $p < .001$, partial $\eta^2 = .021$), paraphilic coercive disorder ($F(1,692) = 17.071$, $p < .001$, partial $\eta^2 = .024$).

CHAPTER IV

Discussion

Criminal Sample

This study investigated incarcerated male adult sexual offenders profiles and the responses to the MASA questionnaire to examine the mediating effects of psychopathy on the relation between pornography and sadism.

In accordance with the hypotheses, adults who had the access to pornography at an early age, or who used either conventional heterosexual pornography or violent pornography frequently, would have higher scores on psychopathy. The more interaction the adult had with the pornography use, the more self-centered impulsive and lack of perspective taking the person will be. It is also supported that such kind of psychopathy tends to result the higher possibility of sadistic fantasy and sadistic behavior, as well as paraphilic coercive disorder (PCD). The direct effect between pornography and sadism does exist among criminal sample, but the partial mediator effects of psychopathy also exist. The models that produced in previous research (Knight & Sims-Knight, 2003, 2004, 2011) have proposed that self-centered impulsivity (indicated as Callous Manipulativeness) is highly correlated with sexualization, and disinhibits high sexualization leads to aggressive fantasies and behavior. In this study, self-centered impulsivity consisted of two parts: impulsivity scale tested moodiness, losing control and impulse; conning and superficial charm scale tested the preference of "taking advantage of others, conning others, charming others into doing what one wants, and manipulating others by lying"

(the MIDSA: MIDSA, 2011). Due to the high collinearity of the two scales, the same self-centered attribute of the items, and the principle factor analysis result, the impulsivity and conning/charming scale were combined together with the name self-centered impulsivity.

Among the non-criminal sample, the self-centered impulsivity partially mediated between the homosexual pornography and sadistic behavior, but completely mediated between homosexual pornography and PCD.

Cognitive-behavioral theories of sexual sadism, in contrast, rest on the assumption of an initial learned association between aggression and arousal that is subsequently (Mokros, Osterheider, Hucker & Nitschke, 2011). The highly sexualized psychopath is not responsive to the distress cues of his victims (Blair, 2006), impulsively follows his own sexual needs, and this sexualization is infused with aggression.

Sexual offenders with frequent homosexual pornography use show a little bit different trend. There were only partial mediator effect when taken the previous three kinds of pornography into consideration, and there might be other mediators that need to be found, but for homosexual pornography, there was a full mediator effect of self-centered impulsivity and lack of perspective taking, which indicated the importance of psychopathy among males who have preference for homosexual porn. And among pornography sub-scales, homosexual pornography use had the biggest difference between criminal and non-criminal groups. In this research, the criminal group was indicated more related to child molesters not rapist, because child molesters had much higher homosexual and child porn use than rapist, while rapists use more violent pornography. Whether the individual will develop into child molester or rapist, the key factor is the psychopathy (Knight, 2008). In this study, the non-criminal sample's psychopathy score was not as significant as criminal sample, which further indicate the complete mediator effect in the

21

homosexual pornography model might be the child molester effect. But further research needs to be done to confirm this.

Note that for Seto (2008) fixation (for him preference and motivation) and psychopathy (disinhibition) are what turn pedophiles (individuals with child sexual preferences) into child molesters (those who abuse children). In our model fixation and psychopathy are independent, and fixation and social competence are independent, but low social competence is related to higher psychopathy, and the concurrence of high fixation, low social competence, and high psychopathy leads to the sadistic type. Again the disregard of the needs of the victim, impulsivity, and increased aggressiveness converge to produce sadism. The role of psychopathy may be more encompassing in this transition, and consequently the full mediation of homosexual porn. There are also several older studies that find that sexual aggression of males tends to be more violent than sexual aggression against females. This might be another avenue to explore theoretically.

Among the criminal sample, there seems to have no difference between the sadistic fantasy, sadistic behavior and PCD, and they are highly correlated with each other. Previous research have concluded that PCD was not a separated disorder, but categorically similar to sadism, more specific, PCD represented a lower end of sadistic fantasy and behavior, which were in the higher end in a continuum scale (Knight, Sims-Knight & Guay, 2013).

Non-criminal Sample

An interesting result shown in non-criminal sample is that lack of perspective taking is not a mediator. The correlation between lack of perspective taking scale and the other scales are quite low (see Table 12), including pornography scales and sadism scales. In this study, among

the psychopathy sub-scale, lack of perspective taking had the biggest difference between two groups. Another study showed the similar result, sexual offenders had greater deficits compare with non-offenders (Hanson & Scott, 1995). This indicated that lacking of perspective taking can be a useful tool to distinguish individuals with sexual abuse propensity versus normal people (Barnett & Ruth, 2013). One theory was called "dangerous world", among sexual murderers group, males had generalized feelings of resentment and anger towards females, and treated females as sexual objects (Beech, Ward & Fisher, 2006). These cognitive processes were relevant to explaining the abusers offensiveness towards women, while among the non-offenders, they would not treat women as not worthy of respect.

Disagree with the hypothesis that the mediator effect among non-criminal sample exist for all of the cases, only some of the mediator effect exists. But all the direct effect between pornography and sadism exist, which indicated the increase of pornography use will increase the sadistic fantasy and sadistic behavior among non-criminal and criminal samples. All the sadistic fantasy related models did not have mediator effect, thus sadistic fantasy seems so different from sadistic behavior and PCD among non-criminal sample. The correlation between self-centered impulsivity and sadistic fantasy is quite low. Normal individuals are good at behavioral and emotional controls, thus the impulsivity is under control, and normal people have the ability to understand others in their view, which indicated that psychopathy might be the key factor to decide a sexual offender and non-offender.

There was partial mediator effect of self-centered impulsivity between the conventional heterosexual pornography and PCD, however, the mediator effect did not exist between conventional heterosexual pornography and sadism. This result and previous mediator results showed that if the sadism as the outcome of the model exist, the PCD outcome will also exist

23

with the same mediator, however, if the PCD outcome exist, the sadism outcome does not necessarily exist. This indicated that sadism (sadistic fantasy and sadistic behavior) might be more extreme than PCD, but they are testing the similar thing.

Violent pornography use did not cause the increase of self-centered impulsivity score among normal males. This result consistent with the previous research, which confirmed that exposure to violent pornography did not increase the aggression (Malamuth & Ceniti, 1986). But contrary to a new longitudinal study by Ybarra et al., (2010), violent X-rated material consumers were around six times more likely to report sexual aggressive behavior than non-consumers during the 36 months. The difference might came from the data collection background, the respondents in this study answered the questions in the 20th century, at that time, there was not much access to violent pornography, and the internet pornography was not wide spread as today, however, Ybarra's study took place in the 21st century, when the internet pornography is widely used and easy to get.

Lack of perspective taking was low correlated with sadistic behavior and PCD, as mentioned previously, non-offenders have good enough perspective taking ability than sexual offenders. Thus, there was no mediator effect of violent pornography.

Conclusions

From this research, we found pornography effects on sadism will be mediated by increased psychopathy among offenders in a criminal sample, and among males in a non-criminal sample under certain circumstances. In both criminal and non-criminal samples, the direct effect between pornography and sadism, between pornography and PCD all exist. PCD was categorically similar to sadism, and represented a lower end of sadistic fantasy and behavior.

Lack of perspective taking and self-centered impulsivity scores are quite different between two

groups, which indicated these two psychopathy factors might be the key to distinguish

individuals with sexual abuse propensity versus normal people

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APPENDIX

Table 1

Criminal Sample Pattern Loading for the Pornography Items

Pornography Items	1	2	3	4	5
child (<13) kind sex mat. nude women; 0-5	0.811				
child (<12) look sex materials; 0-5	0.803				
child (<13) kind sex mat. sex btwn adult; 0-5	0.752				
child (<13) kind sex mat. X-rated; 0-5	0.568				
child (<12) shown sex material; 0-5	0.508				
juv (13-17) kind sex mat. nude child; 0-5		0.891			
juv (13-17) kind sex mat. sex w/child; 0-5		0.865			
child (<13) kind sex mat. nude child; 0-5		0.841			
adult (>17) kind sex mat. sex w/child; 0-5		0.767			
adult (>17) kind sex mat. nude child; 0-5		0.761			
child (<13) kind sex mat. sex w/child; 0-5		0.755			
adult (>17) look sex mat.; 0-5			0.878		
adult (>17) kind sex mat. nude women; 0-5			0.855		
adult masturb when look sex mat.; 0-5			0.847		
adult (>17) kind sex mat. sex btwn adult; 0-5			0.808		
adult (>17) watch X-rated; 0-5			0.72		
juv (13-17) masturb look sex mat.; 0-5			0.55		
juv (13-17) kind sex mat. nude women; 0-5			0.492		
adult gone to strip/live sex show; 0-5			0.425		
juv (13-17) look sex materials; 0-5			0.351		
juv (13-17) watch X-rated; 0-5			0.3		
juv (13-17)kind sex mat. phys harm; 0-5				0.871	
adult (>17) kind sex mat. phys harm; 0-5				0.827	
child (<12) kind sex mat. phys harm; 0-5				0.72	
child (<13) kind sex mat. bondage; 0-5				0.718	
juv (13-17) kind sex mat. bondage; 0-5				0.703	
adult (>17) kind sex mat. bondage; 0-5				0.631	
juv (13-17) kind sex mat. nude men; 0-5					0.888
adult (>17) kind sex mat. nude men; 0-5					0.783
child (<13) kind sex mat. nude men; 0-5					0.648

Correlations Among Factors

Factor 1		.569[**]	.494[**]	.367[**]	.288[**]
Factor 2			.523[**]	.382[**]	.194[**]
Factor 3				.289[**]	.180[**]

Factor 4		.390**

**p<.001.

Table 2

Criminal Sample Pattern Loading for the Psychopathy Items

Psychopathy Items	1	2
conned someone to get what I want; 0-4	0.672	
lied to get them to do what I want; 0-4	0.651	
acted on impulse; 0-5	0.643	
had frightening feelings not understand; 0-4	0.592	
have sudden changes in moods; 0-5	0.573	
lost control, did not want to; 0-4	0.567	
hurt feelings say something w/out thinking; 0-5	0.54	
use charm to get people notice me; 0-5	0.524	
do things make me feel bad about self; 0-5	0.519	
I took advantage of someone; 0-4	0.485	
easily charm someone do anything; 0-4	0.43	
gotten in trouble for things not my fault; 0-4	0.419	
never taken advantage of anyone; 0-4 reverse	0.405	
2 sides every question & try look at them; 0-4 reverse		0.69
willing admit when I make mistake; 0-4 reverse		0.682
look at everybodys side argument; 0-4 reverse		0.669
quick admit making mistake; 0-4 reverse		0.641
I'm always a good listener; 0-4 reverse		0.476
difficult see thing from other guys view; 0-4		0.464
Correlations Among Factors		.346**

**p<.001.

Table 3

Criminal Sample Pattern Loading for the Sadism Items

Sadism items	1	2
sex thoughts cutting woman; 0-4	0.896	
thought killing someone during sex; 0-4	0.781	
thought strangling woman during sex; 0-4	0.73	
thought burn someone during sex; 0-4	0.725	
good feel hurt someone during sex; 0-4	0.566	
sex thoughts threat/fright woman; 0-4	0.539	

thought humiliating woman during sex; 0-4	0.447
beaten woman while having sex; 0-4	0.354
have tied someone up during sex; 0-4	0.798
sex thoughts partner tied legs apart; 0-4	0.657
while sex used handcuff/whips/leathers; 0-4	0.656
during sex enjoy scaring companion; 0-4	0.473
turns on overpowering sexually; 0-4	0.467
more scared more turn on I get; 0-4	0.441
purposely hurt a woman phys during sex; 0-4	0.422
Correlations Among Factors	.736[**]

**p<.001.

Table 4

Non-Criminal Sample Pattern Loading for the Pornography Items

Pornography Items	1	2	3	4	5
adult (>17) kind sex mat. nude women; 0-5	0.919				
adult (>17) kind sex mat. sex btwn adult; 0-5	0.833				
adult (>17) look sex mat.; 0-5	0.796				
adult (>17) watch X-rated; 0-5	0.786				
juv (13-17) kind sex mat. nude women; 0-5	0.775				
juv (13-17) look sex materials; 0-5	0.76				
adult masturb when look sex mat.; 0-5	0.738				
juv (13-17) masturb look sex mat.; 0-5	0.695				
adult (>17) kind sex mat. bondage; 0-5	0.584				
juv (13-17) watch X-rated; 0-5	0.575				
juv (13-17) kind sex mat. bondage; 0-5	0.475				
adult gone to strip/live sex show; 0-5	0.353				
child (<13) kind sex mat. nude women; 0-5		-0.852			
child (<13) kind sex mat. sex btwn adult; 0-5		-0.813			
child (<13) kind sex mat. X-rated; 0-5		-0.738			
child (<12) look sex materials; 0-5		-0.706			
adult (>17) kind sex mat. phys harm; 0-5			0.766		
juv (13-17)kind sex mat. phys harm; 0-5			0.69		
child (<13) kind sex mat. bondage; 0-5			0.465		
adult (>17) kind sex mat. sex w/child; 0-5			0.429		
child (<12) kind sex mat. phys harm; 0-5			0.298		
child (<12) shown sex material; 0-5			0.262		
juv (13-17) kind sex mat. sex w/child; 0-5				0.84	

juv (13-17) kind sex mat. nude child; 0-5			0.731	
juv (13-17) kind sex mat. nude men; 0-5				0.687
child (<13) kind sex mat. nude men; 0-5				0.552
adult (>17) kind sex mat. nude men; 0-5				0.551
child (<13) kind sex mat. nude child; 0-5				0.276
Correlations Among Factors				
Factor 1	.489**	.353**	.089	.002
Factor 2		.442**	.319**	.097
Factor 3			.164*	.066
Factor 4				.478**

**p<.01, *p<.05.

Table 5

Non-Criminal Sample Pattern Loading for the Psychopathy Items

Psychopathy Items	1	2
conned someone to get what I want; 0-4	0.82	
have sudden changes in moods; 0-5	0.686	
I took advantage of someone; 0-4	0.681	
hurt feelings say something w/out thinking; 0-5	0.669	
lied to get them to do what I want; 0-4	0.667	
lost control, did not want to; 0-4	0.647	
use charm to get people notice me; 0-5	0.63	
acted on impulse; 0-5	0.615	
never taken advantage of anyone; 0-4 reverse	0.591	
do things make me feel bad about self; 0-5	0.582	
gotten in trouble for things not my fault; 0-4	0.571	
had frightening feelings not understand; 0-4	0.509	
easily charm someone do anything; 0-4	0.476	
willing admit when I make mistake; 0-4 reverse		0.688
quick admit making mistake; 0-4 reverse		0.602
I?m always a good listener; 0-4 reverse		0.597
2 sides every question & try look at them; 0-4 reverse		0.359
look at everybodys side argument; 0-4 reverse		0.354
Correlations Among Factors		-0.249**

**p<.01.

Table 6

Non-Criminal Sample Pattern Loading for the Sadism Items

Sadism items	1	2
sex thoughts cutting woman; 0-4	0.821	
thought burn someone during sex; 0-4	0.793	
thought killing someone during sex; 0-4	0.775	
during sex enjoy scaring companion; 0-4	0.713	
sex thoughts threat/fright woman; 0-4	0.693	
good feel hurt someone during sex; 0-4	0.679	
purposely hurt a woman phys during sex; 0-4	0.678	
beaten woman while having sex; 0-4	0.509	
more scared more turn on I get; 0-4	0.419	
sex thoughts partner tied legs apart; 0-4		0.854
while sex used handcuff/whips/leathers; 0-4		0.668
have tied someone up during sex; 0-4		0.656
turns on overpowering sexually; 0-4		0.577
thought humiliating woman during sex; 0-4		0.517
thought strangling woman during sex; 0-4		0.366
Correlations Among Factors		.459[**]

**p<.01.

Table 7

Scale Reliability

	criminal sample		non-criminal sample	
	α	items	α	items
Pornography	0.933	30	0.915	28
Early Exposure to Pornography	0.895	5	0.89	4
Conventional Heterosexual Pornography	0.918	10	0.931	12
Violent Pornography	0.89	6	0.686	6
Homosexual Pornography	0.826	3	0.631	4
Child Pornography	0.918	6	0.834	2
Psychopathy	0.851	19	0.78	18
Impulsivity and conning/charming	0.847	13	0.89	13
Lack of perspective taking	0.78	6	0.665	5
Sadism	0.91	15	0.859	15
Sadistic fantasy	0.883	7	0.891	9
Sadistic behavior	0.835	8	0.802	6
paraphilic coercive disorder (PCD)	0.829	4	0.635	3

Table 8

Criminal Sample Mediator Effect (Child Pornography)

Child Pornography to Sadistic Fantasy Mediated By Psychopathy					Child Pornography to Sadistic Behavior Mediated By Psychopathy					Child Pornography to PCD Mediated By Psychopathy				
IV to Mediators (a paths)					IV to Mediators (a paths)					IV to Mediators (a paths)				
	Beta	SE	*t*	*p*		Beta	SE	*t*	*p*		Beta	SE	*t*	*p*
self-centered impulsivity	0.14	0.05	2.99	0.00	self-centered impulsivity	0.14	0.05	2.99	0.00	self-centered impulsivity	0.14	0.05	2.99	0.00
lack of perspective taking	0.09	0.06	1.49	0.14	lack of perspective taking	0.09	0.06	1.40	0.16	lack of perspective taking	0.09	0.06	1.49	0.14
Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.28	0.04	7.67	0.00	self-centered impulsivity	0.29	0.04	7.31	0.00	self-centered impulsivity	0.53	0.07	7.75	0.00
lack of perspective taking	0.08	0.03	2.78	0.01	lack of perspective taking	0.14	0.03	4.68	0.00	lack of perspective taking	0.30	0.05	5.72	0.00
Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)				
Child Pornography	0.08	0.04	1.84	0.07	Child Pornography	0.08	0.04	1.89	0.06	Child Pornography	0.11	0.08	1.37	0.17
Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)				
Child Pornography	0.03	0.04	0.73	0.47	Child Pornography	0.03	0.04	0.75	0.46	Child Pornography	0.01	0.07	0.07	0.94
Model Summary, $R^2=.154$, $F(3,524)=31.866$, $p = .000$					Summary, $R^2=.183$, $F(3,521)=38.782$, $p = .000$					Summary, $R^2=.212$, $F(3,164)=47.038$, $p = .000$				

Table 9

Non-Criminal Sample Mediator Effect (Child Pornography)

Pnchldad to Sadfanr Mediated By Psychopathy					Pnchldad to Sadbehr Mediated By Psychopathy					Pnchldad to PCD Mediated By Psychopathy				
IV to Mediators (a paths)					IV to Mediators (a paths)					IV to Mediators (a paths)				
	Beta	SE	*t*	*p*		Beta	SE	*t*	*p*		Beta	SE	*t*	*p*
self-centered impulsivity	0.16	0.31	0.51	0.61	self-centered impulsivity	0.16	0.31	0.51	0.61	self-centered impulsivity	0.16	0.31	0.51	0.61
lack of perspective taking	0.43	0.32	1.36	0.18	lack of perspective taking	0.43	0.32	1.36	0.18	lack of perspective taking	0.43	0.32	1.36	0.18
Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.06	0.03	1.66	0.10	self-centered impulsivity	0.34	0.06	5.36	0.00	self-centered impulsivity	0.54	0.09	6.18	0.00
lack of perspective taking	0.04	0.03	1.08	0.28	lack of perspective taking	-0.03	0.06	-0.47	0.64	lack of perspective taking	0.00	0.09	-0.02	0.98
Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)				
Child Pornography	0.27	0.13	2.04	0.04	Child Pornography	0.22	0.27	0.80	0.43	Child Pornography	0.13	0.38	0.33	0.74
Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)				
Child Pornography	0.25	0.13	1.85	0.07	Child Pornography	0.17	0.25	0.69	0.49	Child Pornography	0.04	0.35	0.12	0.91
Summary, R^2=.043, $F(3,164)$=2.476, p = .063					Summary, R^2=.168, $F(3,164)$=11.046, p = .000					Summary, R^2=.200, $F(3,164)$=13.675, p = .000				

Table 10

Criminal Sample Mediator Effect (Pornography without Child Porn)

early exposure to pornography to sadistic fantasy mediated by psychopathy				early exposure to pornography to sadistic behavior mediated by psychopathy				early exposure to pornography to PCD mediated by psychopathy			
IV to Mediators (a paths)				**IV to Mediators (a paths)**				**IV to Mediators (a paths)**			
Beta	SE	*t*	*p*	Beta	SE	*t*	*p*	Beta	SE	*t*	*p*
self-centered impulsivity 0.14	0.03	4.61	0.00	self-centered impulsivity 0.15	0.03	4.65	0.00	self-centered impulsivity 0.14	0.03	4.61	0.00
lack of perspective taking 0.12	0.04	2.91	0.00	lack of perspective taking 0.11	0.04	2.80	0.01	lack of perspective taking 0.12	0.04	2.91	0.00
Direct Effect of Mediators on DV (b paths)				**Direct Effect of Mediators on DV (b paths)**				**Direct Effect of Mediators on DV (b paths)**			
self-centered impulsivity 0.27	0.04	7.30	0.00	self-centered impulsivity 0.27	0.04	6.85	0.00	self-centered impulsivity 0.49	0.07	7.21	0.00
lack of perspective taking 0.07	0.03	2.64	0.01	lack of perspective taking 0.14	0.03	4.54	0.00	lack of perspective taking 0.29	0.05	5.56	0.00
Total Effect of IV on DV (c path)				**Total Effect of IV on DV (c path)**				**Total Effect of IV on DV (c path)**			
early exposure to pornography 0.12	0.03	4.41	0.00	early exposure to pornography 0.15	0.03	5.04	0.00	early exposure to pornography 0.27	0.05	5.27	0.00
Direct Effect of IV on DV (c' path)				**Direct Effect of IV on DV (c' path)**				**Direct Effect of IV on DV (c' path)**			
early exposure to pornography 0.07	0.03	2.77	0.01	early exposure to pornography 0.09	0.03	3.35	0.00	early exposure to pornography 0.16	0.05	3.48	0.00
Summary, R^2=.166, $F(3,524)$=34.670, p = .000				Summary, R^2=.199, $F(3,521)$=43.121, p = .000				Summary, R^2=.230, $F(3,524)$=52.173, p = .000			

conventional heterosexual pornography to sadistic fantasy Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.23	0.03	8.25	0.00
lack of perspective taking	0.16	0.04	4.31	0.00

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.23	0.04	6.22	0.00
lack of perspective taking	0.07	0.03	2.53	0.01

Total Effect of IV on DV (c path)

	Beta	SE	t	p
conventional heterosexual pornography	0.18	0.02	7.40	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
conventional heterosexual pornography	0.11	0.02	4.65	0.00

Summary, R^2=.188, $F(3,523)$=40.304, p = .000

conventional heterosexual pornography to sadistic behavior Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.23	0.03	8.28	0.00
lack of perspective taking	0.16	0.04	4.26	0.00

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.23	0.04	5.66	0.00
lack of perspective taking	0.13	0.03	4.32	0.00

Total Effect of IV on DV (c path)

	Beta	SE	t	p
conventional heterosexual pornography	0.21	0.03	8.20	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
conventional heterosexual pornography	0.14	0.03	5.38	0.00

Summary, R^2=.223, $F(3,520)$=49.605, p = .000

conventional heterosexual pornography to PCD Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.23	0.03	8.25	0.00
lack of perspective taking	0.16	0.04	4.31	0.00

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.40	0.07	5.90	0.00
lack of perspective taking	0.27	0.05	5.33	0.00

Total Effect of IV on DV (c path)

	Beta	SE	t	p
conventional heterosexual pornography	0.40	0.04	8.95	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
conventional heterosexual pornography	0.27	0.04	5.99	0.00

Summary, R^2=.260, $F(3,523)$=61.267, p = .000

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violent pornography to Sadistic fantasy Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p

violent pornography to Sadistic behavior Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p

violent pornography to PCD Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p

Column 1

	Beta	SE	t	p
self-centered impulsivity	0.18	0.04	4.80	0.00
lack of perspective taking	0.17	0.05	3.43	0.00
Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.23	0.03	6.79	0.00
lack of perspective taking	0.06	0.03	2.24	0.03
Total Effect of IV on DV (c path)				
violent pornography	0.31	0.03	10.28	0.00
Direct Effect of IV on DV (c' path)				
violent pornography	0.26	0.03	8.83	0.00

Summary, R^2=.263, $F(3,524)$=62.329, p = .000

Column 2

	Beta	SE	t	p
self-centered impulsivity	0.19	0.04	4.85	0.00
lack of perspective taking	0.17	0.05	3.34	0.00
Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.22	0.04	6.25	0.00
lack of perspective taking	0.12	0.03	4.34	0.00
Total Effect of IV on DV (c path)				
violent pornography	0.43	0.03	13.55	0.00
Direct Effect of IV on DV (c' path)				
violent pornography	0.37	0.03	12.20	0.00

Summary, R^2=.364, $F(3,521)$=99.179, p = .000

Column 3

	Beta	SE	t	p
self-centered impulsivity	0.18	0.04	4.80	0.00
lack of perspective taking	0.17	0.05	3.43	0.00
Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.43	0.06	6.77	0.00
lack of perspective taking	0.26	0.05	5.37	0.00
Total Effect of IV on DV (c path)				
violent pornography	0.62	0.06	10.73	0.00
Direct Effect of IV on DV (c' path)				
violent pornography	0.50	0.05	9.20	0.00

Summary, R^2=.322, $F(3,524)$=82.817, p = .000

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homosexual pornography to Sadistic fantasy Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.15	0.03	4.74	0.00
lack of perspective taking	0.09	0.04	2.19	0.03

Direct Effect of Mediators on DV (b

homosexual pornography to Sadistic behavior Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.16	0.03	4.79	0.00
lack of perspective taking	0.08	0.04	1.99	0.05

Direct Effect of Mediators on DV (b

homosexual pornography to PCD Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.15	0.03	4.74	0.00
lack of perspective taking	0.09	0.04	2.19	0.03

Direct Effect of Mediators on DV (b

paths) | | | | | paths) | | | | | paths) | | | |
self-centered impulsivity 0.28 0.04 7.44 0.00 | self-centered impulsivity 0.29 0.04 7.20 0.00 | self-centered impulsivity 0.53 0.07 7.76 0.00

lack of perspective taking 0.08 0.03 2.76 0.01 | lack of perspective taking 0.14 0.03 4.68 0.00 | lack of perspective taking 0.30 0.05 5.74 0.00

Total Effect of IV on DV (c path) | Total Effect of IV on DV (c path) | Total Effect of IV on DV (c path)

homosexual pornography 0.09 0.03 3.09 0.00 | homosexual pornography 0.07 0.03 2.43 0.02 | homosexual pornography 0.09 0.05 1.64 0.10

Direct Effect of IV on DV (c' path) | Direct Effect of IV on DV (c' path) | Direct Effect of IV on DV (c' path)

homosexual pornography 0.04 0.03 1.39 0.17 | homosexual pornography 0.02 0.03 0.62 0.53 | homosexual pornography -0.02 0.05 -0.43 0.67

Summary, R^2=.157, $F(3,524)$=32.417, p = .000 | Summary, R^2=.182, $F(3,521)$=38.712, p = .000 | Summary, R^2=.212, $F(3,524)$=47.115, p = .000

Table 11

Non-criminal Sample Mediator Effect (Pornography without Child Porn)

early exposure to pornography to sadistic fantasy mediated by psychopathy				early exposure to pornography to sadistic behavior mediated by psychopathy				early exposure to pornography to PCD mediated by psychopathy			
IV to Mediators (a paths)				IV to Mediators (a paths)				IV to Mediators (a paths)			
Beta	SE	t	p	Beta	SE	t	p	Beta	SE	t	p
self-centered impulsivity 0.14	0.07	2.11	0.04	self-centered impulsivity 0.14	0.07	2.11	0.04	self-centered impulsivity 0.14	0.07	2.11	0.04
lack of perspective taking 0.05	0.07	0.71	0.48	lack of perspective taking 0.05	0.07	0.71	0.48	lack of perspective taking 0.05	0.07	0.71	0.48
Direct Effect of Mediators on DV (b paths)				Direct Effect of Mediators on DV (b paths)				Direct Effect of Mediators on DV (b paths)			

Column 1

	Beta	SE	t	p
self-centered impulsivity	0.05	0.03	1.36	0.18
lack of perspective taking	0.04	0.03	1.08	0.28

Total Effect of IV on DV (c path)

	Beta	SE	t	p
early exposure to pornography	0.07	0.03	2.61	0.01

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
early exposure to pornography	0.06	0.03	2.28	0.02

Summary, R^2=.053, $F(3,164)$=3.080, p = .029

Column 2

	Beta	SE	t	p
self-centered impulsivity	0.30	0.06	4.85	0.00
lack of perspective taking	-0.05	0.06	-0.81	0.42

Total Effect of IV on DV (c path)

	Beta	SE	t	p
early exposure to pornography	0.25	0.06	4.54	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
early exposure to pornography	0.21	0.05	4.04	0.00

Summary, R^2=.241, $F(3,164)$=17.373, p = .000

Column 3

	Beta	SE	t	p
self-centered impulsivity	0.51	0.09	5.77	0.00
lack of perspective taking	-0.02	0.09	-0.25	0.81

Total Effect of IV on DV (c path)

	Beta	SE	t	p
early exposure to pornography	0.24	0.08	3.07	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
early exposure to pornography	0.17	0.07	2.37	0.02

Summary, R^2=.227, $F(3,164)$=16.014, p = .000

Column 1 — conventional heterosexual pornography to sadistic fantasy Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.44	0.06	7.97	0.00
lack of perspective taking	-0.13	0.07	-2.04	0.04

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.01	0.04	0.28	0.78
lack of perspective taking	0.05	0.03	1.40	0.16

Column 2 — conventional heterosexual pornography to sadistic behavior Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.44	0.06	7.97	0.00
lack of perspective taking	-0.13	0.07	-2.04	0.04

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.11	0.07	1.70	0.09
lack of perspective taking	-0.01	0.06	-0.23	0.82

Column 3 — conventional heterosexual pornography to PCD Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.44	0.06	7.97	0.00
lack of perspective taking	-0.13	0.07	-2.04	0.04

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.34	0.10	3.47	0.00
lack of perspective taking	0.01	0.08	0.12	0.90

Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)				
conventional heterosexual pornography	0.08	0.03	2.91	0.00	conventional heterosexual pornography	0.43	0.05	9.47	0.00	conventional heterosexual pornography	0.48	0.07	6.93	0.00
Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)				
conventional heterosexual pornography	0.08	0.03	2.51	0.01	conventional heterosexual pornography	0.38	0.05	7.14	0.00	conventional heterosexual pornography	0.34	0.08	4.23	0.00
Summary, R^2=.060, $F(3,164)$=3.461, p = .018					Summary, R^2=.363, $F(3,164)$=31.198, p = .000					Summary, R^2=.279, $F(3,164)$=21.126, p = .000				

violent pornography to Sadistic fantasy Mediated By Psychopathy					violent pornography to Sadistic behavior Mediated By Psychopathy					violent pornography to PCD Mediated By Psychopathy				
IV to Mediators (a paths)					IV to Mediators (a paths)					IV to Mediators (a paths)				
	Beta	SE	t	p		Beta	SE	t	p		Beta	SE	t	p
self-centered impulsivity	0.26	0.15	1.68	0.09	self-centered impulsivity	0.26	0.15	1.68	0.09	self-centered impulsivity	0.26	0.15	1.68	0.09
lack of perspective taking	0.31	0.15	2.01	0.05	lack of perspective taking	0.31	0.15	2.01	0.05	lack of perspective taking	0.31	0.15	2.01	0.05
Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)					Direct Effect of Mediators on DV (b paths)				
self-centered impulsivity	0.02	0.03	0.75	0.46	self-centered impulsivity	0.29	0.06	4.85	0.00	self-centered impulsivity	0.49	0.09	5.70	0.00
lack of perspective taking	0.00	0.03	0.07	0.95	lack of perspective taking	-0.08	0.06	-1.40	0.16	lack of perspective taking	-0.06	0.08	-0.76	0.45
Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)					Total Effect of IV on DV (c path)				
violent pornography	0.42	0.06	7.50	0.00	violent pornography	0.65	0.12	5.22	0.00	violent pornography	0.74	0.18	4.18	0.00
Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)					Direct Effect of IV on DV (c' path)				

	Beta	SE	t	p
violent pornography	0.42	0.06	7.16	0.00
Summary, R^2=.256, $F(3,164)$=18.789, p = .000				

	Beta	SE	t	p
violent pornography	0.60	0.12	5.09	0.00
Summary, R^2=.280, $F(3,164)$=21.216, p = .000				

	Beta	SE	t	p
violent pornography	0.64	0.17	3.86	0.00
Summary, R^2=.267, $F(3,164)$=19.874, p = .000				

homosexual pornography to Sadistic fantasy Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.38	0.16	2.36	0.02
lack of perspective taking	0.08	0.17	0.50	0.62

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.04	0.03	1.14	0.25
lack of perspective taking	0.03	0.03	1.04	0.30

Total Effect of IV on DV (c path)

	Beta	SE	t	p
homosexual pornography	0.25	0.07	3.67	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
homosexual pornography	0.23	0.07	3.34	0.00

Summary, R^2=.086, $F(3,164)$=5.119, p = .002

homosexual pornography to Sadistic behavior Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.38	0.16	2.36	0.02
lack of perspective taking	0.08	0.17	0.50	0.62

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.31	0.06	4.84	0.00
lack of perspective taking	-0.04	0.06	-0.69	0.49

Total Effect of IV on DV (c path)

	Beta	SE	t	p
homosexual pornography	0.54	0.14	3.95	0.00

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
homosexual pornography	0.43	0.13	3.29	0.00

Summary, R^2=.217, $F(3,164)$=15.182, p = .000

homosexual pornography to PCD Mediated By Psychopathy

IV to Mediators (a paths)

	Beta	SE	t	p
self-centered impulsivity	0.38	0.16	2.36	0.02
lack of perspective taking	0.08	0.17	0.50	0.62

Direct Effect of Mediators on DV (b paths)

	Beta	SE	t	p
self-centered impulsivity	0.51	0.09	5.79	0.00
lack of perspective taking	-0.01	0.09	-0.16	0.87

Total Effect of IV on DV (c path)

	Beta	SE	t	p
homosexual pornography	0.51	0.20	2.61	0.01

Direct Effect of IV on DV (c' path)

	Beta	SE	t	p
homosexual pornography	0.32	0.18	1.74	0.08

Summary, R^2=.215, $F(3,164)$=14.935, p = .000

Table 12

Criminal Sample Items Correlations

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
Early Exposure to Pornography	1	.569**	.494**	.367**	.288**	.197**	.126**	.189**	.215**	.224**
Conventional Heterosexual Pornography	.569**	1	.523**	.382**	.194**	.339**	.185**	.307**	.338**	.364**
Violent Pornography	.494**	.523**	1	.289**	.180**	.205**	.148**	.409**	.510**	.424**
Homosexual Pornography	.367**	.382**	.289**	1	.390**	.202**	.095*	.134**	.106*	0.071
Child Pornography	.288**	.194**	.180**	.390**	1	.129**	0.065	0.08	0.082	0.06
Self-centered Impulsivity	.197**	.339**	.205**	.202**	.129**	1	.346**	.376**	.385**	.405**
Lack of perspective taking	.126**	.185**	.148**	.095*	0.065	.346**	1	.235**	.309**	.349**
Sadistic fantasy	.189**	.307**	.409**	.134**	0.08	.376**	.235**	1	.736**	.700**
Sadistic behavior	.215**	.338**	.510**	.106*	0.082	.385**	.309**	.736**	1	.807**
PCD	.224**	.364**	.424**	0.071	0.06	.405**	.349**	.700**	.807**	1

Non-criminal Sample Items Correlations

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
Early Exposure to Pornography	1	.489**	.353**	0.089	0.002	.161*	0.055	.199**	.333**	.232**
Conventional Heterosexual Pornography	.489**	1	.442**	.319**	0.097	.526**	-.157*	.220**	.592**	.474**
Violent Pornography	.353**	.442**	1	.164*	0.066	0.129	.154*	.503**	.375**	.309**
Homosexual Pornography	0.089	.319**	.164*	1	.478**	.180*	0.039	.274**	.293**	.199**
Child Pornography	0.002	0.097	0.066	.478**	1	0.04	0.105	.157*	0.062	0.026
Self-centered Impulsivity	.161*	.526**	0.129	.180*	0.04	1	-.249**	0.116	.406**	.447**
Lack of perspective taking	0.055	-.157*	.154*	0.039	0.105	-.249**	1	0.068	-0.128	-0.112
Sadistic fantasy	.199**	.220**	.503**	.274**	.157*	0.116	0.068	1	.459**	.376**
Sadistic behavior	.333**	.592**	.375**	.293**	0.062	.406**	-0.128	.459**	1	.662**
PCD	.232**	.474**	.309**	.199**	0.026	.447**	-0.112	.376**	.662**	1

** Correlation is significant at the 0.01 level (2-tailed).

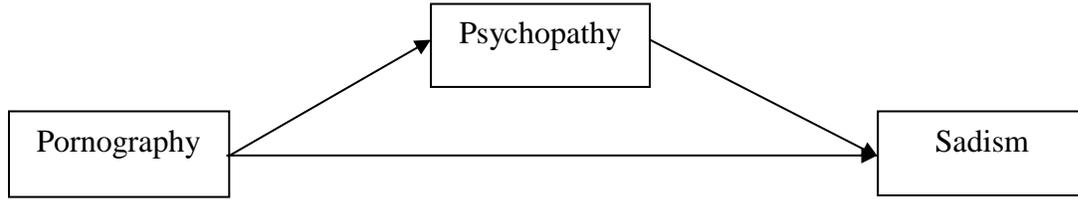* Correlation is significant at the 0.05 level (2-tailed).

Figure 1. Mediator effect model of psychopathy between pornography and sadism.