

## An Empirical Taxonomy of Incarcerated Male Sexual Offenders Using Finite Mixture Modeling: Adult Victims

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The sexual victimization of women remains an endemic social, criminal, and public health problem. Much research has sought to identify risk and protective factors related to the sexual victimization of women so that prevention and intervention strategies can be more informed and targeted. Modern criminology has recognized the heterogeneous nature of many criminal behaviors in terms of their etiology, offender-, offense-, and victim-related characteristics. Such an approach has been labeled criminal profiling or criminal investigative analysis and yields richer information about the nature of crime than reliance on aggregate statistics (Hazelwood & Burgess, 2001). Knight (1999, p. 304) stated that understanding the taxometric structure of a deviant population is the 'keystone to theory building and the cornerstone of intervention'. One area where our understanding of the heterogeneity of criminal behavior is lacking is the offender-offense-victim triad in cases of sexual victimization. Marshall (1997) identified the reduction of heterogeneity among sexual offenders into manageable proportions as a priority research area. Unfortunately, this challenge has largely been met with little to no empirical effort.

Existing taxonomies of sexual offenders are based on their psychological characteristics or motivations or on offense-related characteristics (e.g., Amir, 1971; Groth, Burgess, & Holstrom, 1977; Prentky & Knight, 1991; Rada, 1978). Existing taxonomies differ in terms of the labels applied to individual sexual offender subtypes, but each system shares underlying themes. Perhaps two of the best known taxonomies are those

proposed by 1) Groth *et al.* (1977), consisting of Power Reassurance, Power Assertive, Anger Retaliatory, and Anger Excitation subtypes and 2) Prentky and Knight's (1991) MTC:R3 (Massachusetts Treatment Center, 3<sup>rd</sup> revision) system, consisting of Opportunistic with high or low social competence; Pervasively Angry; Sexual that is either sadistic with overt or muted behaviors or non-sadistic with high or low social competence; and Vindictive with moderate or low social competence.

Although most of the aforementioned taxonomies exhibit face validity, only two investigations to date have evaluated the construct validity of these theoretical systems using quantitative methods, and none have done so using a sample that is broadly generalizable. McCabe and Wauchope (2005) used multidimensional scaling with offense-related police record data and found support for Power Reassurance and Sexual-Sadistic offender subtypes, and weak evidence for Power Assertive and Anger Retaliatory. However, no demographic, psychological, or criminal history data were available for analysis. Using cluster analysis, Rosenberg and Knight (1988) examined the role of substance abuse, life management skills, antisocial behavior, sexual aggression, and offense-related impulsivity in a treatment center sample to validate an early form of the MTC:R3. Nine meaningful sexual offender subtypes were culled from these analyses. However, limitations of this study included combining data on offenders whose victims were an admixture of adults and children and use of sexual offender participants from a single

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treatment center. Clearly, empirical evidence in support of sexual offender subtypes is lacking.

Therefore, the purpose of the present investigation was to develop an empirical taxonomy of male sexual offenders who victimized adult women. Taxometric systems should be theoretically driven and based on etiological and criminological variables that enable discrimination of sexual offenses into reliable (i.e., consistent across populations) and valid (i.e., clear distinction between subtypes, generalizability) categories. To meet this goal, the present study utilized concrete, easily obtainable offender-, offense-, and victim-related descriptive indices measured on a nationally representative sample of sexual offenders.

## Method

### *Participants*

The present study is based on a secondary analysis of data originally collected by the Bureau of the Census in their study entitled *Survey of Inmates in State and Federal Correctional Facilities, 1997*. Data were retrieved from the National Archive of Criminal Justice Data (<http://www.icpsr.umich.edu/NACJD>) on June 28, 2006. The study consisted of personal interviews with a nationally representative sample of state and federal prison inmates selected by 2-stage cluster sampling (first prisons, then inmates) between June and October 1997. Of the 280 prisons selected, 275 participated, resulting in a total sample size of 14,285 randomly selected inmates who agreed to participate and were interviewed (79% male). Data from male inmates incarcerated for the sexual assault or abuse (i.e., rape, sexual abuse or assault) of an adult (>17 years) female were extracted from the sample. Inmates whose controlling sexual offense included multiple victims were excluded as responses related to victim characteristics were ambiguous. A preliminary sample of 235 inmates was reduced to a final sample of 207 due to missing data.

### *Measures*

Participants were interviewed about victim and offense characteristics as well as current and past 1) socio-demographic/economic characteristics, 2)

family dynamics and childhood experiences, 3) substance use/abuse; and 4) criminal behaviors. All variables were categorical except for age at offense and time since incarceration.

### *Statistical Analyses*

Finite mixture modeling (FMM) as implemented in Latent Gold® 4.0 (Vermunt & Magidson, 2005) was used to examine whether the sample of sexual offenders should be best considered unitary or heterogeneous. FMM is a probabilistic clustering technique that addresses two related questions: 1) which variables distinguish latent classes or subtypes? and 2) what number of latent classes or subtypes best accounts for population heterogeneity? In FMM, the predictor variable is an unobserved multinomial latent (class) variable that 'causes' scores on the observed (indicator) variables. Based on the characteristics of each class, a description or label for each class was developed. It was hypothesized that more than one subtype of sexual offender would be identified and, therefore, a series of 1 through 10 nested latent class FMMs were compared using the AIC3 and bootstrap likelihood ratio test. Non-significant indicator variables were iteratively removed. Time served in months was covaried to (potentially) adjust for threats to internal validity associated with historical or recall biases. The 2-stage cluster sampling design was accounted for in the analysis by specifying prison ID as the primary sampling unit so that correct standard errors could be calculated.

## Results

A four-class FMM possessed the best fitting, most parsimonious relationship to the data based on the AIC3. Entropy  $R^2$  for the 4-class model was .95 and classification error was 2%. Figures 1 and 2 illustrate the percentage of occurrence of given characteristics within each sexual offender subtype. An examination of the characteristics of each subtype revealed strong similarities to the taxonomy proposed by Prentky and Knight (1991).

Class 1 (39% of sample) was most similar to the Opportunistic subtype, without differentiating between high and low social competency. This

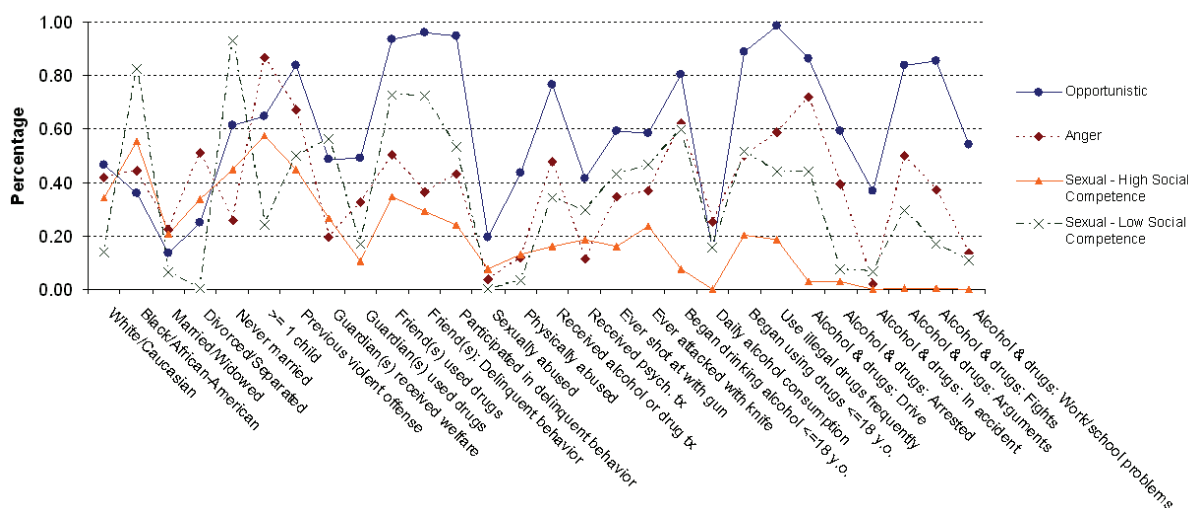


Figure 1. Offender characteristics by sexual offender subtype.

group consisted of mostly young ( $M = 27$  years at arrest), single (60%) individuals, who engaged heavily in juvenile unsocial behavior (~98%), were of low SES (50% receiving welfare during childhood), had extensive prior (violent) criminal histories (>80%), were most likely to have experienced childhood sexual and physical abuse (20% and 42%, respectively), received alcohol and drug or psychiatric treatment (80% and 40%, respectively), had guardians that abused substances (50%), were victims of violent crime (60%), were frequent drug users (99%) and moderate alcohol users, had many problems associated with alcohol and drug use (40-90%), were most likely to use a knife (19%) and alcohol and drugs (80% and 60%, respectively) during the offense, were likely to commit the offense in the victim's residence (~40%), and were equally likely to perpetrate against victims of any relationship type (e.g., 34% stranger, 35% casual acquaintance, 31% well known). Thus, sexual perpetrators in this class were most likely substance abusing criminal opportunists whose assaults were part of a larger criminal background and were perpetrated against victims almost indiscriminately during sexual or other non-sexual crimes.

Class 2 (28% of sample) was most appropriately aligned with the Pervasively Angry sexual offender subtype. These were mostly older ( $M = 33$  years at time of arrest), divorced (50%) individuals and more than 80% had at least one child. These individuals were low to moderate in self-reported participation in juvenile unsocial

behavior (~40%), were highest in daily alcohol consumption (25%) and moderate to high in frequent drug use (60%), were moderate to high in terms of experiencing problems associated with alcohol or drug use (~40-70%; particularly fighting and arguments), had the second highest rate of alcohol (60%) and drug (30%) use at the time of offense, had one of the highest rates of gun use during offense (10%), victimized individuals well-known to them (80%; friend or casual acquaintance), and had one of the highest rates of victim alcohol or drug use at the time of offense (>50%). The anger and difficulties reported by these individuals, particularly associated with heavy substance use and abuse, and the use of violence or force during the offense, underscores the angry nature of these sexual offenders.

Class 3 (18% of sample) was best described as possessing features of the Sexual (non-sadistic) subtype with high social competence. Individuals in this class were distinguished from others as being mostly single (~80%), slightly older ( $M = 31$  years at time of arrest), and were the least likely to have a prior (violent) offense (42%). These individuals were also the least likely to have engaged in juvenile unsocial behavior (~20-30%), low in terms of welfare assistance during childhood (25%) and guardian substance abuse (10%), were virtually absent of problems associated with substance use, were also likely to know their victim (~70%; friend or casual acquaintance), had one of the highest rate of gun use during offense (10%), and were most likely to

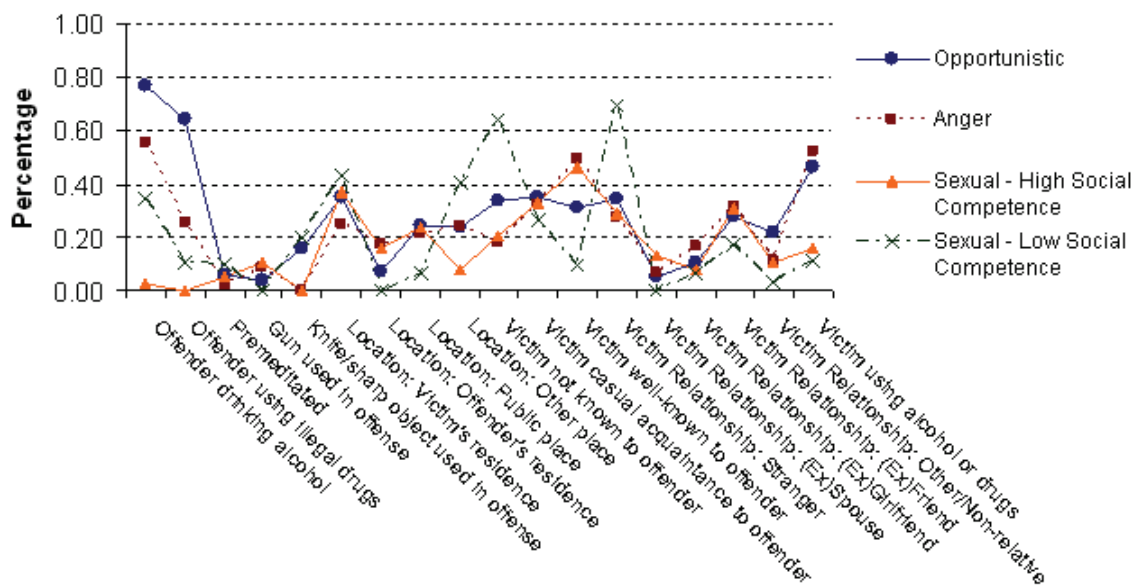


Figure 2. Offense and victim characteristics by sexual offender subtype.

commit the offense in the victim's residence (40%). Offenders in this subtype were older and likely victimized for sexual reasons, victimizing individuals that were close to or trusted them, thus demonstrating a higher level of social competence.

Class 4 (15% of sample) was also most closely associated with the Sexual (non-sadistic) subtype, but with low social competence. These individuals were the youngest subtype ( $M = 23$  years at time of offense), were the most likely to be single (95%), and to have never had children (only 20%). These individuals had moderately high (violent) criminal histories (>50%) and came from the lowest SES backgrounds (~60% received welfare in childhood). Participation in juvenile unsocial behavior was moderate to high (~60-70%) and they reported moderate levels of substance use/problems (~50% frequently used drugs). These individuals were most likely to plan their sexual victimizations in advance (10%) and use violence (20% used a knife) during the offense as compared to the other subtypes. Most victims were either strangers to the offender (70%) or only a casual acquaintance (20%) and most sexual offenses took place in the victim's residence (45%) or another, unspecified, location perhaps at work or school (45%). Individuals in this subtype were younger and likely acted out for sexual reasons, but targeted mostly strangers, thus

highlighting their inability to gain trust or intimacy with their victims as compared to those in the 3<sup>rd</sup> subtype, and hence, were conjectured to be of low social competence.

#### Discussion

Results of the present study suggest that sexual offenses can be distinguished empirically into meaningful subtypes. The identified classes correspond to those proposed in prior research and findings lend support specifically to the MTC:R3 system. Such consistency of findings is particularly important as most research on sexual offender subtypes has not come from sources outside the original authors.

Other strengths of this study include enhanced generalizability through use of a nationally representative (random) sample, increased internal validity from use of data collected in a standardized manner, and individual-level information on offender, victim, and offense. An advantage of the present taxonomy is that it is devoid of psychoanalytic/psychological constructs that are part of many classification systems as it only relies on descriptive offender-, victim-, and offense-related characteristics. Such crime scene and criminal background variables are often available to individuals in law enforcement who often do not have the luxury of procuring psychological evaluation data when processing a

crime-scene. However, as a result, the more psychodynamically defined subtypes identified in other systems were not observed in the present study, such as the Vindictive subtype (Prentky & Knight, 1991).

An understanding of the characteristics of sexual offense classes can assist in identifying risk factors for sexual victimization. For instance, offenders in the Sexual-High Social Competence and Angry were mostly individuals intimate with their victims. Such information can be used to identify vulnerabilities to sexual victimization. Treatment for offenders may also be tailored according to the specific subtype to which they belong.

A limitation of the present study is that data were based on self-report and corresponding threats to internal validity would include recall biases, comprehension errors, and the offender faking good or bad. Also, due to the size of the sample versus the number of parameters estimated, the final FMM may be overly sample specific. Therefore, the proposed taxonomy should be considered disconfirmable and subject to further testing and modification. Taxonomies should also be interpreted narrowly, bearing in mind their purpose and the variables used in their construction. Taxometric analyses may be inaccurate for or unable to detect small classes (e.g., Sexual-Sadistic), or if a prominent subclass is represented by only a few individuals in a given sample.

In conclusion, the present study lends strong empirical support to the empirical classification of sexual offenders into distinguishable subtypes. Evidence for the existence of the Opportunistic, Angry, Sexual-High Competence, and Sexual-Low Competence subtypes proposed by Prentky and Knight (1991) is provided from a representative sample of sexual offenders. Examination of sexual offender subtype characteristics can be used to inform strategies for the prevention of sexual violence.

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