

FACTOR STRUCTURE OF THE BUMBY RAPE SCALE

A Two-Factor Model

CHANTAL A. HERMANN
KELLY M. BABCHISHIN
KEVIN L. NUNES
CRAIG LETH-STEENSEN
Carleton University

FRANCA CORTONI
Université de Montréal

Rape-supportive cognition is both theoretically and empirically related to rape. Several types of rape-supportive cognition (cognitive distortions) have been identified in the literature, suggesting that rapists' rape-supportive cognition may be multidimensional. The Bumby RAPE Scale is one measure of rape-supportive cognition. The authors conducted an exploratory factor analysis using polychoric correlations to examine the types of rape-supportive cognition assessed by the Bumby RAPE Scale with a sample of 280 adult male sex offenders. A two-factor model was found; the two factors were labeled Excusing Rape and Justifying Rape. The current study suggests that the Bumby RAPE Scale is multidimensional. This factor structure may provide greater precision and clarity in the assessment of rape-supportive cognition, which may facilitate more informative research and, ultimately, contribute to more effective sex offender treatment and management.

Keywords: Bumby RAPE Scale; cognitive distortions; rape-supportive cognition; exploratory factor analysis; polychoric correlations

Rapists' *rape-supportive cognition* is theoretically and empirically related to the perpetration of rape (e.g., Bumby, 1996; DeGue & DiLillo, 2004; DeGue, DiLillo, & Scalora, 2010; Hall & Hirschmann, 1991; Lanier, 2001; Polaschek & Gannon, 2004; Polaschek & Ward, 2002). Consequently, measures of rape-supportive cognition are often used in sex offender research and treatment programs. Rape-supportive cognition, often termed *cognitive distortions* or *rape myths*, encompasses attitudes, beliefs, excuses, and

AUTHORS' NOTE: *We thank Brian Grant and the Correctional Service of Canada for facilitating access to these data. We are grateful to Phil Chitty for sharing his expertise in programming issues in the Offender Management System; Colette Cousineau for assisting with the coding, retrieval, and organization of the data; Pamela Yates and Drew Kingston for sharing the data they had gathered and organized; and the many treatment providers across Canada who administered, completed, recorded, and submitted the measures. We also thank Ian McPhail and Renee Malcom for reviewing an earlier draft of the manuscript. The views expressed are those of the authors and do not necessarily represent the views of the Correctional Service of Canada. This research was supported in part by grants from the Social Sciences and Humanities Research Council of Canada. All correspondence should be addressed to Chantal A. Hermann, Department of Psychology, Carleton University, 1125 Colonel By Dr., Ottawa, Ontario, K1S 5B6; e-mail: chermann@connect.carleton.ca.*

CRIMINAL JUSTICE AND BEHAVIOR, Vol. XX No. X, Month XXXX xx-xx
DOI: 10.1177/0093854812436802
© 2012 International Association for Correctional and Forensic Psychology

justifications about rape, rapists, women, and victims of rape (e.g., Blake & Gannon, 2010; Blumenthal, Gudjonsson, & Burns, 1999; Bumby, 1996; Gannon, 2009; Lonsway & Fitzgerald, 1994). Research suggests that several types of rape-supportive cognition exist (e.g., Beech, Fisher, & Ward, 2005; Fisher & Beech, 2007; Maruna & Mann, 2006). However, many measures assess rape-supportive cognition as a unidimensional rather than a multidimensional construct and, as a result, may neglect important distinctions.

Theoretically, several prominent models suggest that rape-supportive cognition plays an important role in sexual offending (e.g., Hall & Hirschmann, 1991; Malamuth, 1986; Malamuth, Sockloskie, Koss, & Tanaka, 1991). For example, Ward's (2000) implicit theories model suggests that sexual offenders endorse offense-supportive cognition (i.e., implicit theories) that allows for the misinterpretation of victims' intentions, beliefs, and behavior in an offense-facilitating manner (for an application of this theory specifically to rapists, see Polaschek & Ward, 2002). Hall and Hirschmann's (1991) quadripartite model of sexual aggression against adults suggests that physiological sexual arousal (e.g., sexual arousal to rape), rape-supportive cognition, affective dyscontrol, and personality problems (e.g., antisocial tendencies) are all factors that combine differently in rapists to promote rape. Relatedly, Malamuth's confluence model (Malamuth, 1986; Malamuth et al., 1991) outlines two pathways that lead to sexual aggression: the *antisocial* or *impersonal sex* path and the *hostile masculinity* path. In the antisocial or impersonal sex path, sexually aggressive behavior stems from negative childhood environments, early delinquent behavior, and impersonal sex. In the hostile masculinity path, sexually aggressive behavior stems from rape-supportive cognition, narcissism, and a need to sexually dominate women.

There is also a large research base that suggests that rape-supportive cognition may play a role in sexual offending. Several studies have found that sexually aggressive participants endorse significantly more rape-supportive cognition (assessed with a variety of different measures) than do nonsexually aggressive participants (e.g., Abbey & McAuslan, 2004; Bumby, 1996; DeGue & DiLillo, 2004; Lanier, 2001). Moreover, studies have found that the endorsement of rape-supportive cognition is associated with self-reported proclivity to rape (e.g., Bernat, Stolp, Calhoun, & Adams, 1997; Blake & Gannon, 2010; Bohner, Jarvis, Eyssele, & Siebler, 2005; Lanier, 2001) and future sexually aggressive behavior (e.g., Lanier, 2001; Thompson, Koss, Kingree, Goree, & Rice, 2010).

In the published literature, rape-supportive cognition is often measured and discussed as a unitary construct (e.g., Basow & Minieri, 2011; Bouffard & Bouffard, 2011). For example, the Bumby RAPE Scale (Bumby, 1996) has been conceptualized as a unidimensional measure of rape-supportive cognition and is often used to study cognition related to rape (e.g., Blumenthal et al., 1999; DeGue & DiLillo, 2004). Research, however, suggests that rape-supportive cognition can be divided by theme or type of cognitive construct. Scully and Marolla (1984) found evidence of five rape-supportive cognition themes when interviewing 114 convicted rapists: "women as seductresses," "women mean yes when they say no," "most women eventually relax and enjoy it," "nice girls don't get raped," and "guilty of a minor wrongdoing." More recently, the application of Ward's (2000) implicit theories model to rapist populations has found evidence of at least five different rape-supportive cognition themes: "women are unknowable/dangerous," "women are sex objects," "entitlement," "male sex drive is uncontrollable," and "dangerous world" (Beech et al., 2005; Fisher & Beech, 2007; Polaschek & Gannon, 2004; Polaschek & Ward, 2002).

Measures of rape-supportive cognition can also be divided by theme (e.g., Briere, Malamuth, & Check, 1985; Costin, 1985; Feild, 1978). For example, a factor analysis of

Burt's (1980) Rape Myth Acceptance scale found four themes: "victim responsible for rape," "rape only happens to certain kinds of women," "rape reports as manipulation," and "disbelief of rape claims" (Briere et al., 1985). Similarly, Feild (1978) found the Attitudes Toward Rape Scale divided into eight themes: "women's responsibility in rape prevention," "sex as a motivation for rape," "severe punishment for rape," "victim precipitation," "normality of rapists," "power as motivation for rape," "favourable perception of woman after rape," and "resistance as woman's role during rape."

As noted above, rape-supportive cognition seems to encompass several cognitive constructs, including attitudes, beliefs, justifications, and excuses for rape. Maruna and Mann (2006) highlight the notion that these cognitive constructs should be examined separately. Similarly, social psychologists tend to define, theorize, and examine attitudes, beliefs, justifications, and excuses as unique cognitive constructs. For example, attitudes are typically defined as summary evaluations of psychological objects (Ajzen, 2001; Eagly & Chaiken, 1993; Fazio, 2007); beliefs, as knowledge accepted to be true regardless of the objective truth (Nisbett & Ross, 1980); excuses, as cognitions that alleviate personal responsibility by attributing the cause of the event to external forces (Scott & Lyman, 1968); and justifications, as cognitions that minimize the harm or wrongfulness of the event (Scott & Lyman, 1968). Some researchers suggest that some types of rape-supportive cognition may function to facilitate sexual offending, whereas others suggest that some types of rape-supportive cognition may function to excuse offending behavior postoffense (Maruna & Mann, 2006) or, more generally, facilitate self-deception (Blake & Gannon, 2010; Gannon & Polaschek, 2006). Thus, there is evidence to suggest that different rape-supportive cognitive constructs serve different functions. If this is the case, important information may be lost when rape-supportive cognition is assessed as a unitary construct.

Generally, there are mixed findings in the literature regarding the relationship between rape-supportive cognition and sexual recidivism. Hanson and Morton-Bourgon (2004) conducted a meta-analysis examining risk factors for sexual recidivism and found a small positive relationship between general offense-supportive cognition and sexual recidivism ($d = 0.22$, $k = 9$, $N = 1,617$). The same relationship, however, was not evident for rape-supportive cognition specifically. Mann, Hanson, and Thornton (2010) noted that there was significant variability among the studies; this variability was attributed to the context of the rape-supportive cognition assessment (e.g., adversarial settings vs. research settings). In addition to the context of assessment, it is possible that different cognition themes or cognitive constructs may be more or less associated with risk of sexual recidivism. Measuring rape-supportive cognition as a unitary construct may mask the relationship between some cognitive constructs and sexual recidivism.

Although the available evidence has not provided clear support for the role of rape-supportive cognition in sexual recidivism, rape-supportive cognition is, as noted above, predictive of future sexual aggression in prospective studies on noncorrectional samples (e.g., Lanier, 2001; Thompson et al., 2010), and it has been theoretically and empirically related to the initiation of rape. As a result, it is a core treatment target in most North American sex offender treatment programs (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010) and is considered to be a psychologically meaningful risk factor for sexual aggression (Mann et al., 2010). One prominent measure of rape-supportive cognition used in sex offender treatment is the Bumby RAPE Scale (Bumby, 1996; e.g., Canada's National Sex Offender Treatment Program [NaSOP]; Yates, Goguen, Nicholaichuk, Williams, & Long, 2000). From the literature presented above, it seems likely that the Bumby RAPE

Scale measures multiple themes or cognitive constructs. However, the factor structure of this measure has not yet been examined in the published literature. Thus, the purpose of the present study was to examine the factor structure of the Bumby RAPE Scale using exploratory factor analysis.

METHOD

PARTICIPANTS

Participants were 303 adult male sex offenders who were participating in Correctional Service of Canada's (CSC) sex offender treatment programs between 2000 and 2004. These participants were drawn from a data set developed for a larger project (Nunes & Cortoni, 2007). Of the 303 participants, 23 were missing data on at least one item of the Bumby RAPE Scale (Bumby, 1996). Little's MCAR (missing completely at random) test for missing data was nonsignificant, and it was concluded the data were missing completely at random, $\chi^2(674) = 594.0, p = .99$. As a result, participants with missing data ($n = 23$) were removed from the analyses, leaving a total sample size of 280. The sample was primarily Caucasian ($n = 230$; 82.1%) and had a mean age of 44.7 years ($SD = 13.0$). Of the 280 participants, 262 were serving federal sentences (i.e., 2 years or more) and 18 were serving provincial sentences. In terms of victim age in the index sex offense, 120 had one victim younger than 12 years old, 128 had one victim between 12 and 17 years old, and 77 had one victim 18 years or older (note that the sample sizes sum to more than 280 because some offenders had victims in multiple age groups). For factor analysis, a heterogeneous sample of sex offenders is desirable (i.e., some participants are expected to score higher and some expected to score lower on the Bumby RAPE Scale) because a homogeneous sample may attenuate correlations, leading to inaccurate results (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Gorsuch, 1997). With regard to risk for sexual recidivism, 46 participants were classified as low risk on the Static-99 (Hanson & Thornton, 2000) actuarial measure of risk of sexual recidivism, 62 were classified as low to medium risk, 57 were classified as medium to high risk, 30 were classified as high risk, and 85 did not have information on risk of sexual recidivism (a description of the Static-99 is presented in the Measures section below).

MEASURES

The Bumby RAPE Scale. The Bumby RAPE Scale (Bumby, 1996) is a self-report measure consisting of 36 statements reflective of rape-related cognitive distortions (e.g., "Women who get raped probably deserved it"). For each statement, participants are asked to rate how much they agree with the statement on a 4-point Likert scale (1 = *strongly disagree* to 4 = *strongly agree*). The responses are then summed, with higher scores indicating a higher acceptance of rape-related cognitive distortions (Bumby, 1996).

Overall, the Bumby RAPE Scale scores have demonstrated good reliability and validity. Each item of the Bumby RAPE Scale had an item-to-total correlation greater than .30 with a mean score of .65. Cronbach's alpha was .96 in Bumby's (1996) evaluation and was .95 in the current study, suggesting excellent internal consistency (Robinson, Shaver, &

Wrightsmann, 1991). In addition, Bumby found that the test-retest correlation was good ($r = .86$) across a 2-week interval. Validity was assessed by correlating the Bumby RAPE Scale with the Cognitive Distortions/Immaturity ($r = .33, p < .05$) and Justification ($r = .34, p < .05$) scales of the Multiphasic Sex Inventory (Nichols & Molinder, 1984). The correlations were low to moderate, providing some evidence of convergent validity. Furthermore, the Bumby RAPE Scale was not significantly related to measures of socially desirable responding in Bumby's study ($r = -.02, p > .05$) or the current study ($r = .04, p > .05$), suggesting that socially desirable responding is not an issue.

Static-99. The Static-99 (Hanson & Thornton, 2000) is an actuarial measure of sexual recidivism risk. The measure consists of 10 static items scored using the information commonly available in offenders' institutional files. The total score can range from 0 to 12; individuals with scores of 0 to 1 are considered low risk for sexual recidivism, individuals with scores of 2 to 3 are considered low to medium risk for sexual recidivism, individuals with scores of 4 to 5 are considered medium to high risk for sexual recidivism, and individuals who score 6 and above are considered high risk for sexual recidivism. Hanson and Thornton (2000) report that the Static-99 has moderate predictive accuracy (area under the curve [AUC] = .71). Similarly, a recent meta-analysis found that the Static-99 had moderate predictive accuracy (mean AUC = .68, $k = 63$, $N = 20,010$; Hanson & Morton-Bourgon, 2009).

Stable-2000. The Stable-2000 (Hanson, Harris, Scott, & Helmus, 2007) is a measure designed to assess dynamic sexual recidivism risk. The measure assesses six domains using file- and interview-based information. The six domains include (a) significant social influences, (b) intimacy deficits, (c) sexual self-regulation, (d) attitudes supportive of sexual assault, (e) cooperation with supervision, and (f) general self-regulation. The total score can range from 0 to 12; individuals with scores of 0 to 4 are considered low risk for sexual recidivism, individuals with scores of 5 to 8 are considered moderate risk for sexual recidivism, and individuals with scores of 9 to 12 are considered high risk for sexual recidivism. Hanson et al. (2007) report that the Stable-2000 has good internal consistency ($\alpha = .83$) and good interrater reliability (intraclass correlation = .89). In addition, the Stable-2000 has moderate predictive validity for sexual recidivism (AUC = .66, 95% confidence interval CI [.59, .72]), violent recidivism (AUC = .65, 95% CI [.59, .70]), and general recidivism (AUC = .67, 95% CI [.63, .71]) (Hanson et al., 2007).

PROCEDURE

The data used in the current study are archival and are part of a larger data set collected by CSC to assess treatment effectiveness of a national sex offender treatment program (NaSOP; see Nunes & Cortoni, 2007). The Bumby RAPE Scale, Static-99, and Stable-2000 were completed as part of the pretreatment test battery and/or for other assessments during the participants' sentences.

STATISTICAL ANALYSES

Exploratory factor analysis was used to examine the factor structure of the Bumby RAPE Scale. The goal of exploratory factor analysis is to reveal any latent variables that

cause the measured variables (or items) to covary (Costello & Osborne, 2005; Fabrigar et al., 1999). To uncover latent variables, a correlation matrix of the measured variables is analyzed (Floyd & Widaman, 1995). Importantly, error or bias in the estimation of these correlations will produce substantive bias in the results. Typically, research using factor analysis in the social sciences analyzes Pearson product-moment correlation matrices; however, when analyzing items measured on ordinal scales (e.g., Likert-type scale data), Pearson product-moment correlations produce biased estimates, particularly when data are not normally distributed (Brown, 2006; Holgado-Tello, Chacón-Moscoso, Barbero-García, & Vila-Abad, 2010; O'Connor, 2009). Ordinal data theoretically measure continuous constructs; however, the categorical restrictions imposed by ordinal scales reduce data variability. As a result, data evidence reduced relationships when using Pearson product-moment correlations (Brown, 2006; Flora & Curran, 2004; Holgado-Tello et al., 2010). Restricted correlations, in turn, may lead to underestimated factor loadings and less accurate results (Brown, 2006; Holgado-Tello et al., 2010).

In contrast, polychoric correlations estimate the relationship between two theorized normally distributed, continuous latent variables from two observed ordinal variables (Flora & Curran, 2004; Holgado-Tello et al., 2010). Unlike Pearson product-moment correlations, polychoric correlations are more consistent and robust correlation estimators for ordinal data (Flora & Curran, 2004; Holgado-Tello et al., 2010). For example, in a simulation study, Holgado-Tello and colleagues (2010) generated ordinal data (e.g., 5-point Likert-type scale) and found that Pearson product-moment correlations consistently produced biased factor structures relative to those produced using polychoric correlations for both exploratory and confirmatory factor analysis. Thus, for the current study, polychoric correlation matrices were analyzed instead of Pearson product-moment correlation matrices.

Factor extraction and rotation. MPlus Version 6.0 (Muthén & Muthén, 2010) was used to conduct the exploratory factor analysis. Factors were extracted using the weighted least square (WLSMV) method. The WLSMV estimator is recommended by Muthén and Muthén (2010) for exploratory factor analysis of ordinal data. Generally, Flora and Curran (2004) found the WLSMV estimator to be relatively robust against small sample sizes and violations of normality. In addition, simulation studies suggest that the WLSMV estimator performs well regardless of ceiling and floor effects in ordinal data with sample sizes as small as 200 (Brown, 2006).

When examining the factor structure of items assessing similar psychological constructs, we would expect that all of the items would first relate to a general factor (e.g., rape-supportive cognition) and then to each of their own factors (Costello & Osborne, 2005; Gorsuch, 1997). As such, factors were rotated using an oblique rotation method (Geomin). Oblique rotation differs from orthogonal rotation in that it allows factors to correlate (Costello & Osborne, 2005; Fabrigar et al., 1999; Russell, 2002).

Factor retention. The number of factors retained was based on four factor retention methods: (a) Kaiser's criterion (i.e., keeping the number of factors with eigenvalues greater than 1.00), (b) scree plot, (c) parallel analysis, and (d) Velicer's minimum average partial test (MAP test). Parallel analysis is the comparison of eigenvalues from the original data set to eigenvalues from a number of randomly generated data sets. The purpose is to determine the number of eigenvalues in the original data set that exceed eigenvalues

generated by chance alone. Each of the randomly generated data sets is designed so that it parallels the number of participants and variables in the original data set. The randomly generated data were computed using the original data (i.e., raw data permutations; Fabrigar et al., 1999; Hayton, Allen, & Scarpello, 2004; O'Connor, 2000). The MAP test bases factor retention on the amount of systematic variance, relative to unsystematic variance, present in the correlation matrix after each factor has been extracted. The number of extractions that result in the smallest average squared partial correlation determines the number of factors to retain (see O'Connor, 2000, for a more in depth explanation). Each factor retention method has advantages and disadvantages, and using multiple factor retention methods is preferable (Henson & Roberts, 2006). However, of the four retention methods, parallel analysis and the MAP test are the least subjective methods because they are statistically based and, as a result, are given the most weight when making decisions about the number of factors to retain (O'Connor, 2000; Schmitt, 2011).

Factor structure fit. After the number of factors to retain has been determined, the overall factor structure fit can be assessed using fit indices. The root mean square error of approximation (RMSEA) assesses the lack of fit in a factor structure relative to a perfect factor structure (Tabachnick & Fidell, 2007) and generally should not exceed .06 (Hu & Bentler, 1999; Schmitt, 2011). The comparative fit index (CFI) assesses the factor structure fit relative to a baseline model where there are no relationships between items (Brown, 2006); generally, a CFI of .95 or greater indicates good fit. The standardized root mean square residual (SRMR) is the average difference between the original correlations in the input matrix and correlations predicted by the factor structure (Brown, 2006); generally, values less than .08 indicate acceptable fit (Hu & Bentler, 1999; Schmitt, 2011). There is debate about the validity of fit indices, particularly, the cutoff values (e.g., Schmitt, 2011). As such, they should be used only as guidelines.

Standardized factor loadings. Items have conventionally been sorted into their respective factors using the magnitude of the factor loadings. Typically, items with factor loadings of .30 to .40 or greater are said to load onto a particular factor (Cudeck & O'Dell, 1994; Schmitt & Sass, 2011). In addition to using this rule of thumb, standardized factor loadings can be used to assess whether an item loads onto a particular factor (Cudeck & O'Dell, 1994; Schmitt, 2011; Schmitt & Sass, 2011). A significant factor loading is determined by testing whether the factor loading significantly differs from zero. To determine significance and protect against Type 1 error, a correction procedure for correlated factors is used to compute the appropriate α level (see Cudeck & O'Dell, 1994; Schmitt, 2011). The Z score associated with the determined α level is then used as the critical point for determining significance.

RESULTS

An exploratory factor analysis was conducted on the 36 items of the Bumby RAPE Scale (Bumby, 1996). Many of the items were not normally distributed; however, we did not transform or exclude any items because polychoric correlations are robust against violations of normality (Flora & Curran, 2004) and the WLSMV estimator performs well regardless

of ceiling and floor effects with small samples (Brown, 2006). The correlations ranged from .30 to .80, suggesting that the matrix was factorable.

FACTOR STRUCTURE

As noted above, to determine the appropriate number of factors to retain, the scree plot, Kaiser's criterion, parallel analysis, and the MAP test were used. Parallel analysis and the MAP test both indicated that two factors should be retained (for parallel analysis, see Figure 1 and Table 1). The scree plot suggested retaining two to three factors (see Figure 1), and Kaiser's criterion suggested retaining six factors. The results of the parallel analysis and MAP test were given the most weight because these methods are the least subjective; thus, two factors were retained. Together the factors accounted for 55.94% of the variance. The prerotation eigenvalues and proportion of variance explained are presented in Table 1.

Model fit statistics were then used to assess the fit of the final factor structure. A two-factor model demonstrated a good fit, with a RMSEA of .051 (90% CI [.046, .056]), CFI of .968, and SRMR of .052. The rotated factor loadings and standardized rotated factor loadings are presented in Table 2.

To interpret the factor structure, the rotated factors were examined for factor loadings greater than .40 (Stevens, 2002), the standardized factor loadings were examined for standardized factor loadings that significantly differed from zero, and the factor structure loadings were examined to see which factor each item most strongly correlated with. Two items (Items 4 and 8) had rotated factor loadings greater than .40, significant standardized factor scores, and high correlations on both factors. In addition, one item (Item 35) did not have any rotated factor loadings greater than .40 but significantly loaded onto both factors. Finally, one item (Item 1) did not have any rotated factor loadings greater than .40 and did not significantly load onto either factor (see Table 2). Because the RAPE Scale is already published and in use, all of the items were retained to make the results most applicable for applied work with sexual offenders.

To determine where to place items that loaded similarly on both factors, the internal consistency of the factor and the content of the item were considered. The internal consistency of Factor 1 did not change with the removal of any of the cross-loaded items; the content of Item 1 fit best with this factor and was retained. Factor 1 consisted of 20 items and had excellent internal consistency ($\alpha = .92$); on the basis of the content of these items, this factor was labeled Excusing Rape (see Table 3). For Factor 2, the removal of Items 1, 4, 8, and 35 did not change the internal consistency of the factor. Thus, Items 4, 8, and 35 were retained on this factor because their content was consistent with the factor and their inclusion did not adversely affect the internal consistency of the factor. Factor 2 contained 16 items and had excellent internal consistency ($\alpha = .91$); on the basis of the content of these items, this factor was labeled Justifying Rape (see Table 3).

Total scores for each factor were then computed, and the relationship between each factor and the Static-99 and Stable-2000 was examined (see Table 4). The relationships were examined while including all of the sex offenders and including only sex offenders with at least one adult victim (i.e., rapists). The Excusing Rape factor was not related to the Static-99 but did have a moderate nonsignificant positive relationship with the Stable-2000 for the rapists subsample. The Justifying Rape factor had a small nonsignificant positive relationship with the Static-99 and a large significant positive relationship with the Stable-2000 for the rapist subsample. The correlations between the two factors and the risk

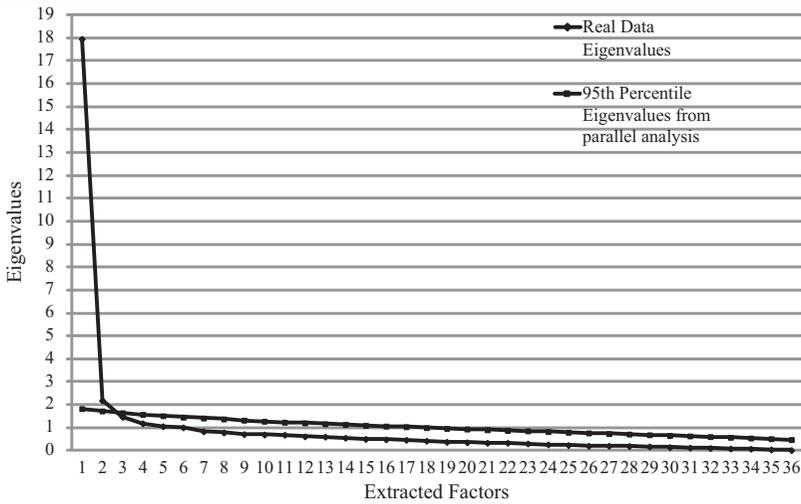


Figure 1: Scree Plot With Parallel Analysis Using the 95th Percentile Eigenvalues

TABLE 1: Eigenvalues and Proportion of Variance Explained for Retained Factors

Factor	Initial Eigenvalue	Proportion of Variance Explained Prerotation	95th Percentile Eigenvalues
1	17.95	49.86%	1.83
2	2.19	6.08%	1.73
3	1.47 ^a		1.65
4	1.19		1.57
5	1.06		1.52
6	1.01		1.46

a. The point where the parallel analysis eigenvalue exceeds the initial eigenvalue. Only the results for the raw data permutations ($n = 1,000$ data sets) 95th percentile eigenvalues are presented in the table; however, the same results were obtained when computer-generated normally distributed data were used ($n = 5,000$ data sets).

scales were not significantly different, as indicated by their overlapping 84% confidence intervals. Three t -tests tests were also conducted to examine whether rapists significantly differed from child molesters on the Excusing Rape factor, the Justifying Rape factor, and the total Bumby RAPE Scale score. In all cases, child molesters endorsed more rape-supportive cognitions than did rapists, but the differences were small and nonsignificant: Excusing Rape, $t(228) = 0.55, p = .58, d = -0.08, 95\% \text{ CI } [-0.35, 0.20]$; Justifying Rape, $t(228) = 1.64, p = .10, d = -0.23, 95\% \text{ CI } [-0.50, 0.04]$; total score, $t(228) = 1.07, p = .29, d = -0.15, 95\% \text{ CI } [0.42, 0.12]$.

DISCUSSION

The current study is the first in the published literature to examine the factor structure of the Bumby RAPE Scale. Using exploratory factor analysis, we discovered a two-factor model. The first factor was labeled Excusing Rape. This factor contains items that seem to

TABLE 2: Rotated Factor Loadings and Standardized Rotated Factor Loadings for the Bumbly RAPE Scale

Item Number	Item	Rotated Factor Loading (Standardized Rotated Factor Loading)	
		Factor 1: Excusing Rape	Factor 2: Justifying Rape
1	Men who commit rape are probably responding to a lot of stress in their lives, and raping helps reduce that stress	0.28 (3.10)	0.19 (2.10)
2	Women who get raped probably deserved it	0.17 (1.75)	0.57 (6.51)
3	Women generally want sex no matter how they can get it	0.60 (7.88)	0.21 (2.51)
4	Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex	0.47 (5.60)	0.41 (4.77)
5	If a woman does not resist strongly to sexual advances, she is probably willing to have sex	0.61 (8.18)	0.14 (1.72)
6	Women often falsely accuse men of rape	0.88 (13.74)	-0.26 (-3.27)
7	A lot of women who get raped had "bad reputations" in the first place	0.54 (7.50)	0.28 (3.89)
8	If women did not sleep around so much, they would be less likely to get raped	0.41 (5.13)	0.50 (6.27)
9	If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually	0.65 (8.01)	0.11 (1.21)
10	When women wear tight clothes, short skirts, and no bra or underwear, they are just asking for sex	0.70 (11.85)	0.19 (2.53)
11	A lot of women claim they were raped just because they want attention	0.74 (11.57)	0.08 (1.00)
12	Victims of rape are usually a little bit to blame for what happens	0.51 (8.37)	0.37 (5.81)
13	If a man has had sex with a woman before, then he should be able to have sex with her any time he wants	0.11 (1.76)	0.74 (13.36)
14	Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt	0.02 (0.31)	0.74 (13.78)
15	Women who go to bars a lot are mainly looking to have sex	0.47 (7.98)	0.35 (5.63)
16	A lot of times, when women say "no," they are just playing hard to get and really mean "yes"	0.30 (4.10)	0.55 (9.12)
17	Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood	-0.06 (-0.80)	0.85 (13.42)
18	Often, a woman reports rape long after the fact because she gets mad at the man she had sex with and is trying to get back at him	0.59 (8.03)	0.21 (2.73)
19	As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad	-0.07 (-1.05)	0.84 (16.10)
20	When a women gets raped more than once, she is probably doing something to cause it	0.35 (4.85)	0.53 (8.11)
21	Women who get raped will eventually forget about it and get on with their lives	0.34 (3.95)	0.41 (5.05)
22	On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually	0.00 (-0.03)	0.88 (36.02)
23	I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way	0.32 (4.10)	0.48 (6.84)
24	When women act like they are too good for men, most men probably think about raping the women to put them in their place	0.13 (1.66)	0.55 (7.52)
25	I believe that society and the courts are too tough on rapists	0.24 (2.95)	0.38 (4.48)

(continued)

TABLE 2: (continued)

Item Number	Item	Rotated Factor Loading (Standardized Rotated Factor Loading)	
		Factor 1: Excusing Rape	Factor 2: Justifying Rape
26	Most women are sluts and get what they deserve	0.02 (0.18)	0.81 (11.41)
27	Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is	0.62 (8.88)	0.21 (2.69)
28	Generally, rape is not planned—a lot of times it just happens	0.68 (7.82)	-0.23 (-2.44)
29	If a person tells himself that he will never rape again, then he probably won't	0.68 (7.75)	-0.25 (-2.50)
30	A lot of men who rape do so because they are deprived of sex	0.76 (11.02)	-0.08 (-0.92)
31	The reason a lot of women say "no" to sex is because they don't want to seem loose	0.50 (7.55)	0.24 (3.36)
32	If a woman goes to the home of a man on the first date, she probably wants to have sex with him	0.56 (8.60)	0.28 (3.70)
33	Many women have a secret desire to be forced into having sex	0.80 (26.31)	0.00 (0.10)
34	Most of the men who rape have stronger sexual urges than other men	0.49 (5.44)	0.08 (0.84)
35	I believe that any woman can prevent herself from being raped if she really wants to	0.38 (4.73)	0.30 (3.72)
36	Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child	0.80 (9.81)	-0.26 (-2.58)

Note. For the standardized score, the critical z score was 3.40 ($\alpha = .00036$). Bolded values indicate significant loading on the factor ($p < .0002$).

serve the common function of mitigating rapists' responsibility or guilt for rape by questioning the credibility of victims' accusations, attributing rape to the complicity of victims, and attributing responsibility for the offense to high sex drive, sexual deprivation, and childhood sexual victimization. For example, items such as "If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually" and "Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child" may alleviate responsibility by blaming rape on the victim and child sexual abuse. The second factor was labeled Justifying Rape. This factor contains items that seem to mitigate the perceived wrongfulness or harmfulness of rape by reflecting sentiments of sexual entitlement, an adversarial approach to sexual relationships, hostility toward women, and minimizing harm to victims. For example, the item "As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad" minimizes the harm of rape by suggesting that as long as rape is not physically violent, it is not harmful.

For rapists, the Excusing Rape factor was not related to static risk of sexual recidivism but had a moderate, albeit not statistically significant, positive relationship with dynamic risk of sexual recidivism. The Justifying Rape factor had a small-to-moderate, not statistically significant, positive relationship with static risk of sexual recidivism and a large, statistically significant, positive relationship with dynamic risk of sexual recidivism for the rapist subgroup. Thus, justifying rape may be associated with increased risk for sexual

TABLE 3: Rotated Factor Loadings, Standardized Rotated Factor Loadings, and Factor Structure Loadings for the Final Factor Structure of the Bumby RAPE Scale

<i>Item Number</i>	<i>Item</i>	<i>Rotated Factor Loading (Standardized Rotated Factor Loadings)</i>	<i>Factor Structure Loading</i>
Factor 1:			
Excusing Rape			
1	Men who commit rape are probably responding to a lot of stress in their lives, and raping helps reduce that stress	0.28 (3.10)	0.42
3	Women generally want sex no matter how they can get it	0.60 (7.88)	0.75
5	If a woman does not resist strongly to sexual advances, she is probably willing to have sex	0.61 (8.18)	0.71
6	Women often falsely accuse men of rape	0.88 (13.74)	0.70
7	A lot of women who get raped had "bad reputations" in the first place	0.54 (7.50)	0.73
9	If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually	0.65 (8.01)	0.73
10	When women wear tight clothes, short skirts, and no bra or underwear, they are just asking for sex	0.70 (11.85)	0.83
11	A lot of women claim they were raped just because they want attention	0.74 (11.57)	0.80
12	Victims of rape are usually a little bit to blame for what happens	0.51 (8.37)	0.77
15	Women who go to bars a lot are mainly looking to have sex	0.47 (7.98)	0.72
18	Often, a woman reports rape long after the fact because she gets mad at the man she had sex with and is trying to get back at him	0.59 (8.03)	0.74
27	Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is	0.62 (8.88)	0.76
28	Generally, rape is not planned—a lot of times it just happens	0.68 (7.82)	0.51
29	If a person tells himself that he will never rape again, then he probably won't	0.68 (7.75)	0.51
30	A lot of men who rape do so because they are deprived of sex	0.76 (11.02)	0.71
31	The reason a lot of women say "no" to sex is because they don't want to seem loose	0.50 (7.55)	0.67
32	If a woman goes to the home of a man on the first date, she probably wants to have sex with him	0.56 (8.60)	0.76
33	Many women have a secret desire to be forced into having sex	0.80 (26.31)	0.81
34	Most of the men who rape have stronger sexual urges than other men	0.49 (5.44)	0.54
36	Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child	0.80 (9.81)	0.62

(continued)

TABLE 3: (continued)

<i>Item Number</i>	<i>Item</i>	<i>Rotated Factor Loading (Standardized Rotated Factor Loadings)</i>	<i>Factor Structure Loading</i>
Factor 2: Justifying Rape			
2	Women who get raped probably deserved it	0.57 (6.51)	0.69
4	Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex	0.41 (4.77)	0.73
8	If women did not sleep around so much, they would be less likely to get raped	0.50 (6.27)	0.79
13	If a man has had sex with a woman before, then he should be able to have sex with her any time he wants	0.74 (13.36)	0.81
14	Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt	0.74 (13.78)	0.76
16	A lot of times, when women say "no," they are just playing hard to get and really mean "yes"	0.55 (9.12)	0.76
17	Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood	0.85 (13.42)	0.81
19	As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad	0.84 (16.10)	0.80
20	When a women gets raped more than once, she is probably doing something to cause it	0.53 (8.11)	0.78
21	Women who get raped will eventually forget about it and get on with their lives	0.41 (5.05)	0.65
22	On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually	0.88 (36.02)	0.88
23	I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way	0.48 (6.84)	0.71
24	When women act like they are too good for men, most men probably think about raping the women to put them in their place	0.55 (7.52)	0.64
25	I believe that society and the courts are too tough on rapists	0.38 (4.48)	0.54
26	Most women are sluts and get what they deserve	0.81 (11.41)	0.82
35	I believe that any woman can prevent herself from being raped if she really wants to	0.30 (3.72)	0.57

Note. For the standardized score, the critical z score was 3.40 ($\alpha = .00036$). Bolded values indicate significant loading on the factor ($p < .0002$).

recidivism. Of note, rapists did not significantly differ from child molesters on the Excusing Rape factor, Justifying Rape factor, or the total score of the RAPE Scale.

In addition to conceptualizing the RAPE Scale factors on the basis of their putative functions (i.e., to mitigate responsibility or to minimize the wrongfulness of rape), it may also be important to examine the types of rape-supportive cognition themes reflected within each factor. One central theme of the Excusing Rape factor is the notion that rapists' responsibility for rape is mitigated by the creditability and complicity of victims (e.g., "When

TABLE 4: Correlations Between Static-99, Stable-2000, Excusing Rape Factor, Justifying Rape Factor, and RAPE Total Score

Risk Measure	Factor 1		Factor 2		Bumby RAPE Scale		n
	Excusing Rape	95% CI	Justifying Rape	95% CI	Total Score	95% CI	
Rapists ^a							
Static-99	.08	[-.18, .32]	.21	[-.05, .44]	.14	[-.11, .38]	61
Stable-2000	.31	[-.14, .66]	.52**	[.11, .77]	.42	[-.01, .72]	21
All sexual offenders							
Static-99	-.09	[-.23, .05]	-.12	[-.26, .02]	-.11	[-.25, .03]	195
Stable-2000	-.01	[-.20, .19]	.03	[-.16, .22]	.01	[-.19, .20]	102

Note. Sample size fluctuates as a result of missing data on risk measures. CI = confidence interval.

a. Rapists were defined as sex offenders with at least one adult victim.

** $p < .001$.

women wear tight clothes, short skirts, and no bra or underwear, they are just asking for sex”). This type of sentiment reflects the women-are-sex-objects implicit theory (Beech et al., 2005; Fisher & Beech, 2007; Polaschek & Gannon, 2004; Polaschek & Ward, 2002). The women-are-sex-objects implicit theory suggests that women are in a constant state of sexual desire; this results in a sexual undertone for all of their actions and makes them receptive to violent and coercive sex. This type of sentiment is also reflective of the women-as-seductresses rape-supportive cognition theme presented by Scully and Marolla (1984). This rape-supportive cognition theme suggests that women are coy about their sexual availability and interest but want sex nonetheless. Items such as “The reason a lot of women say ‘no’ to sex is because they don’t want to seem loose” and “If a woman goes home with a man on a first date, she probably wants to have sex with him” reflect the women-as-seductresses rape-supportive cognition theme.

The Justifying Rape factor also encompasses sentiments reflective of rape-supportive cognition themes found in the literature. As noted above, the central theme of this factor is minimizing the harm or wrongfulness of rape. This factor contains sentiments that reflect the minimization of the harm of rape in general (e.g., “As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad”) and sentiments that minimize the harm of rape to certain victims (e.g., “Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex”). These sentiments reflect Scully and Marolla’s (1984) rape-supportive cognition theme “women mean ‘yes’ when they say ‘no.’” For this theme, the resulting harm of rape is minimized by the fact that offenders believe women want to have sex with them, even when they resist. For example, the item “A lot of times, when women say ‘no,’ they are just playing hard to get and really mean ‘yes’” reflects this rape-supportive cognition theme. These sentiments also reflect Scully and Marolla’s rape-supportive cognition theme “nice girls don’t get raped.” This theme suggests that when a victim’s characteristics, reputation, or behavior goes against normal sex role expectations, rape is not as harmful or is to be expected. For example, items such as “When a woman gets raped more than once, she is probably doing something to cause it” and “If women did not sleep around so much, they would be less likely to get raped” reflect this rape-supportive cognition theme.

The Justifying Rape factor also consists of sentiments that reflect the gatekeeper implicit theory (a variant of the women-are-sex-objects implicit theory; Polaschek & Ward, 2002).

This implicit theory suggests that women are gatekeepers of sex, and if they have previously consented to sex, they should always be willing to have sex and, as a result, cannot be harmed by rape (Polaschek & Ward, 2002). For example, the item "If a man has had sex with a woman before, then he should be able to have sex with her anytime he wants" reflects this implicit theory.

As discussed above, the sentiments encompassed within the Bumby RAPE Scale factors reflect rape-supportive cognition themes present in the literature. This is not surprising, as the Bumby RAPE Scale was created to reflect prior research on rapists' rape-supportive cognition, and some of these rape-supportive cognition themes were developed using items from the Bumby RAPE Scale (e.g., Polaschek & Ward, 2002). What is surprising, however, is that the factor structure of the Bumby RAPE Scale seems to suggest that some of the theoretically distinct rape-supportive cognition themes may not, in fact, be distinct. For example, the Justifying Rape factor encompassed sentiments reflective of both Scully and Marolla's (1984) rape-supportive cognition themes "women mean 'yes' when they say 'no'" and "nice girls don't get raped," suggesting that these rape-supportive cognition themes may not be distinct or may share the same function. Conversely, the Excusing Rape and the Justifying Rape factors both seem to contain sentiments reflective of variants of the women-are-sex-objects implicit theory (e.g., women-are-sex-objects and gatekeeper implicit theories), suggesting that these variants may be more distinct than previously believed or serve different functions. In the current analyses, the factors seem to have clustered on the basis of function (i.e., excuses and justifications) rather than theme. From the discussion above, it is clear that the derived factors fit well with the excuses-versus-justifications distinction. Thus it may be important for researchers to identify, organize, and investigate rape-supportive cognition by function in addition to theme. In addition, these findings suggest that the Bumby RAPE Scale does not assess all of the different rape-supportive cognition themes proposed in the literature. More research on the distinction between types of rape-supportive cognitive constructs is needed.

There are some limitations to the current analyses. Interestingly, each of the Bumby RAPE Scale factors seemed to have a different pattern of relationships with static and dynamic risk of sexual recidivism for rapists, but the differences between the correlations did not reach statistical significance. The sample size was small for these analyses, and it is possible that with a larger sample size, the Justifying Rape factor may be significantly more related to risk of sexual recidivism than the Excusing Rape factor. Thus, the relationship between different cognitive constructs and risk of sexual recidivism requires further investigation.

As noted above, rapists did not significantly differ from nonrapists on the Excusing Rape factor, the Justifying Rape factor, or the total RAPE Scale score. Furthermore, the magnitudes of the differences between groups were also small, suggesting that both groups of sex offenders tend to endorse similar levels of rape-related excuses and justifications. These findings are limited, however, in that we were unable to compare sex offenders with only adult victims to sex offenders with only child victims, because this would have reduced the sample size even further. It is possible differences may emerge with more exclusive groups of sex offenders.

Another limitation was that one item, "Men who commit rape are probably responding to a lot of stress in their lives, and raping helps reduce that stress," did not significantly load onto either of the factors. These analyses were exploratory in nature. Consequently, replication

with confirmatory factor analysis and further construct-validity analyses would increase confidence in the above factor structure and in using the Bumby RAPE Scale as a multidimensional measure. Future research should further investigate the multidimensional nature of the rape-supportive cognition construct by factor-analyzing multiple measures of offense-supportive cognition.

Although there are some limitations to the above findings, these results have promising implications. Using the Bumby RAPE Scale as a multidimensional tool may increase precision in measuring rape-supportive cognition. Greater precision, in turn, may lead to a better understanding of the types of rape-supportive cognition that contribute to the initiation and the maintenance of sexually aggressive behavior. Similarly, understanding the functions of different types of rape-supportive cognitions in the sex offense process would allow clinicians to better identify and treat the criminogenic needs of rapists.

REFERENCES

- Abbey, A., & McAuslan, P. (2004). A longitudinal examination of male college students' perpetration of sexual assault. *Journal of Consulting and Clinical Psychology, 72*, 747-756. doi:1037/0022-006X.72.5.747
- Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52*, 27-58. doi:10.1146/annurev.psych.52.1.27
- Basow, A. S., & Minieri, A. (2011). "You owe me": Effects of date cost, who pays, participant gender, and rape myth beliefs on perceptions of rape. *Journal of Interpersonal Violence, 26*, 479-497. doi:10.1177/0886260510363421
- Beech, A., Fisher, D., & Ward, T. (2005). Sexual murderers' implicit theories. *Journal of Interpersonal Violence, 20*, 1366-1389. doi:10.1177/0886260505278712
- Bernat, J. A., Stolp, S., Calhoun, K. S., & Adams, H. E. (1997). Construct validity and test-retest reliability of a date rape decision latency measure. *Journal of Psychopathology and Behavioral Assessment, 19*, 315-330. doi:10.1007/BF02229024
- Blake, E., & Gannon, T. A. (2010). The implicit theories of rape-prone men: An information-processing investigation. *International Journal of Offender Therapy and Comparative Criminology, 54*, 895-914. doi:10.1177/0306624X09347732
- Blumenthal, S., Gudjonsson, G., & Burns, J. (1999). Cognitive distortions and blame attribution in sex offenders against adults and children. *Child Abuse and Neglect, 23*, 129-143. doi:10.1016/S0145-2134(98)00117-3
- Bohner, G., Jarvis, C. I., Eyssele, F., & Siebler, F. (2005). The causal impact of rape myth acceptance on men's rape proclivity: Comparing sexually coercive and non-coercive men. *European Journal of Social Psychology, 35*, 819-828. doi:10.1002/ejsp.284
- Bouffard, L. A., & Bouffard, J. A. (2011). Understanding men's perceptions of risks and rewards in a date rape scenario. *International Journal of Offender Therapy and Comparative Criminology, 55*, 626-645. doi:10.1177/0306624X10365083
- Briere, J., Malamuth, N., & Check, J. V. P. (1985). Sexuality and rape supportive beliefs. *International Journal of Women's Studies, 8*, 398-403.
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.
- Bumby, K. (1996). Assessing the cognitive distortions of child molesters and rapists: Development and validation of the MOLEST and RAPE Scales. *Sexual Abuse: A Journal of Research and Treatment, 8*, 37-54. doi:10.1007/BF02258015
- Burt, M. R. (1980). Cultural myths and supports for rape. *Journal of Personality and Social Psychology, 38*, 217-230.
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation, 10*, 1-9.
- Costin, F. (1985). Beliefs about rape and women's social roles. *Archives of Sexual Behavior, 14*, 319-325.
- Cudeck, R., & O'Dell, L. L. (1994). Applications of standard error estimates in unrestricted factor analysis: Significance tests for factor loadings and correlations. *Psychological Bulletin, 115*, 475-487.
- DeGue, S., & DiLillo, D. (2004). Understanding perpetrators of nonphysical sexual coercion: Characteristics of those who cross the line. *Violence and Victims, 19*, 673-688. doi:10.1891/vivi.19.6.673.66345
- DeGue, S., DiLillo, D., & Scalora, M. (2010). Are all perpetrators alike? Comparing risk factors for sexual coercion and aggression. *Sexual Abuse: A Journal of Research and Treatment, 22*, 402-426. doi:10.1177/1079063210372140
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272-299.
- Fazio, R. H. (2007). Attitudes as object-evaluation association of varying strength. *Social Cognition, 25*, 664-703. doi:10.1521/soco.2007.25.5.603

- Feild, H. S. (1978). Attitudes toward rape: A comparative analysis of police, rapists, crisis counsellors, and citizens. *Journal of Personality and Social Psychology*, *36*, 156-179.
- Fisher, D., & Beech, A. R. (2007). Implicit theories of rapists and sexual murderers. In T. A. Gannon, T. Ward, A. R. Beech, & D. Fisher (Eds.), *Aggressive offenders' cognition* (pp. 31-51). Chichester, UK: Wiley.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, *9*, 466-491. doi:10.1037/1082-989X.9.4.466
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, *7*, 286-299. doi:10.1037/1040-3590.7.3.286
- Gannon, T. A. (2009). Current cognitive distortion theory and research: An internalist approach to cognition. *Journal of Sexual Aggression*, *15*, 225-246. doi:10.1080/13552600903263079
- Gannon, T. A., & Polaschek, D. L. L. (2006). Cognitive distortions in child molesters: A re-examination of key theories and research. *Clinical Psychology Review*, *26*, 1000-1019. doi:10.1016/j.cpr.2005.11.010
- Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment*, *68*, 532-560. doi:10.1207/s15327752jpa6803_5
- Hall, G. C. N., & Hirschman, R. (1991). Towards a theory of sexual aggression: A quadripartite model. *Journal of Consulting and Clinical Psychology*, *59*, 662-669.
- Hanson, R. K., Harris, A. J. R., Scott, T.-L., & Helmus, L. (2007). *Assessing the risk of sexual offenders on community supervision: The Dynamic Supervision Project*. Ottawa, Canada: Public Safety Canada.
- Hanson, R. K., & Morton-Bourgon, K. E. (2004). *Predictors of sexual recidivism: An updated meta-analysis* (Corrections User Report No. 2004-02). Ottawa, Canada: Public Safety Canada.
- Hanson, R. K., & Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment*, *21*, 1-21. doi:10.1037/a0014421
- Hanson, R. K., & Thornton, D. (2000). Improving risk assessment for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior*, *24*, 119-136. doi:10.1023/A:1005482921333
- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, *7*, 191-205. doi:10.1177/1094428104263675
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, *66*, 393-416. doi:10.1177/0013164405282485
- Holgado-Tello, F. P., Chacón-Moscoso, S., Barbero-García, I., & Vila-Abad, E. (2010). Polychoric versus Pearson's correlations in exploratory and confirmatory factor analysis of ordinal variables. *Quality and Quantity*, *44*, 153-166. doi:10.1007/s11135-008-9190-y
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1-55. doi:10.1080/10705519909540118
- Lanier, C. A. (2001). Rape-accepting attitudes: Precursors to or consequences of forced sex. *Violence Against Women*, *7*, 876-885. doi:10.1177/10778010122182802
- Lonsway, K. A., & Fitzgerald, L. F. (1994). Rape myths: In review. *Psychology of Women Quarterly*, *18*, 133-164. doi:10.1111/j.1471-6402.1994.tb00448.x
- Malamuth, N. M. (1986). Predictors of naturalistic aggression. *Journal of Personality and Social Psychology*, *50*, 26-49.
- Malamuth, N. M., Sockloskie, R. J., Koss, M. P., & Tanaka, J. S. (1991). Characteristics of aggressors against women: Testing a model using a national sample of college students. *Journal of Consulting and Clinical Psychology*, *59*, 670-681.
- Mann, R. E., Hanson, R. K., & Thornton, D. (2010). Assessing risk for sexual recidivism: Some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse: A Journal of Research and Treatment*, *22*, 191-217. doi:10.1177/1079063210366039
- Maruna, S., & Mann, R. E. (2006). A fundamental attribution error? Rethinking cognitive distortions. *Legal and Criminological Psychology*, *11*, 155-177. doi:10.1348/135532506X114608
- McGrath, R., Cumming, G., Burchard, B., Zeoli, S., & Ellerby, L. (2010). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, VT: Safer Society Press.
- Muthén, L. K., & Muthén, B. O. (2010). *MPlus user's guide*. Los Angeles, CA: Muthén and Muthén.
- Nichols, H. R., & Molinder, I. (1984). *Multiphasic Sex Inventory manual: A test to assess the psychosexual characteristics of the sexual offender*. Tacoma, WA: Nichols and Molinder.
- Nisbett, R. E., & Ross, L. (1980). *Human inferences: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice Hall.
- Nunes, K. L., & Cortoni, F. (2007). *Assessing treatment change in sexual offenders* (Research Report No. R-184). Ottawa, Canada: Correctional Service Canada.
- O'Connor, B. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, and Computers*, *32*(3), 396-402. doi:10.3758/BF03200807
- O'Connor, B. (2009). *Cautions regarding item-level factor analysis*. Retrieved from <https://people.ok.ubc.ca/brioconn/nfactors/itemanalysis.html>

- Polaschek, D. L. L., & Gannon, T. A. (2004). The implicit theories of rapists: What convicted offenders tell us. *Sexual Abuse: A Journal of Research and Treatment*, *16*, 299-314. doi:10.1023/B:SEBU.0000043325.94302.40
- Polaschek, D. L. L., & Ward, T. (2002). The implicit theories of potential rapists: What our questionnaires tell us. *Aggression and Violent Behavior*, *7*, 385-406. doi:10.1016/S1359-1789(01)00063-5
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes: Vol. 1. Measures of social psychological attitudes series* (pp. 1-16). San Diego, CA: Academic Press.
- Russell, D. W. (2002). In search of underlying dimensions: The use and abuse of factor analysis in personality and social psychology bulletin. *Personality and Social Psychology Bulletin*, *28*, 1629-1646. doi:10.1177/014616702237645
- Schmitt, T. A. (2011). Current methodological considerations in exploratory and confirmatory factor analysis. *Journal of Psychoeducational Assessment*, *29*, 304-321. doi:10.1177/0734282911406653
- Schmitt, T. A., & Sass, D. A. (2011). Rotation criteria and hypothesis testing for exploratory factor analysis: Implications for factor pattern loadings and interfactor correlations. *Educational and Psychological Measurement*, *71*, 95-113. doi:10.1177/0013164410387348
- Scott, M. B., & Lyman, S. M. (1968). Accounts. *American Sociological Review*, *33*, 46-62.
- Scully, D., & Moralla, J. (1984). Convicted rapists' vocabulary of motive: Excuses and justifications. *Social Problems*, *31*, 530-544.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). London, UK: Lawrence Erlbaum.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson Education.
- Thompson, M. P., Koss, M. P., Kingree, J. B., Goree, J., & Rice, J. (2010). A prospective meditational model of sexual aggression among college men. *Journal of Interpersonal Violence*. Advance online publication. doi:10.1177/0886260510388285
- Ward, T. (2000). Sexual offenders' cognitive distortions as implicit theories. *Aggression and Violent Behavior*, *5*, 491-507. doi:10.1016/S1359-1789(98)00036-6
- Yates, P. M., Goguen, B. C., Nicholaichuk, T. P., Williams, S. M., & Long, C. A. (2000). *National sex offender programs: Volume 2. Moderate intensity*. Ottawa, Canada: Correctional Service of Canada.

Chantal A. Hermann is a graduate student in forensic psychology at Carleton University. Her research interests include the role of various cognitions in the initiation and persistence of sexual aggression, emotional congruence with children in sexual offenders, and online sexual offending.

Kelly M. Babchishin is a graduate student in forensic psychology at Carleton University and a research assistant at Public Safety Canada. Her research interests include pedophilia, online sexual offending, and more applied areas, such as sex offender risk assessment and treatment.

Kevin L. Nunes is an associate professor in the Department of Psychology and director of the Aggressive Cognitions and Behaviour Research Lab at Carleton University. The main focus of his research is on the role of various cognitions in the initiation and persistence of sexual and nonsexual violence. Other research interests include risk assessment, correctional programming, and offender management.

Craig Leth-Steensen is an associate professor in the Department of Psychology at Carleton University with training in cognitive psychology and the application of quantitative and statistical techniques to the analysis of psychological data. One main focus of his research is the development of mathematical and computational models that can provide theoretical accounts for human cognitive and psychophysical performance. At present, his main experimental interests involve the study of comparative judgments of symbolically represented attributes (including numbers), speed-accuracy trade-offs, and a wide variety of information processing phenomena.

Franca Cortoni received her PhD in clinical and forensic psychology from Queen's University at Kingston, Ontario, Canada. After many years with the Correctional Service of Canada, she joined the School of Criminology at the Université de Montréal in 2007. Her research interests include factors associated with the development of sexual offending behavior, risk assessment, and treatment of both male and female sexual offenders.