



A REVIEW OF COGNITIVE FACTORS IN THE ETIOLOGY OF RAPE: THEORIES, EMPIRICAL STUDIES, AND IMPLICATIONS

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ABSTRACT. *In the past decade, research into the etiology of rape has increasingly focused on cognitive variables. The studies reviewed in the present article provide evidence that men with a high proclivity to rape have more rape supportive attitudes, are more likely to consider victims to be responsible for rape, and are less knowledgeable about the negative impact of rape on the victims. These men tend to misperceive cues emitted by women in heterosocial interactions; fail to generate inhibitory self-verbalizations to suppress association of sex and aggression; and have more coercive, sexual fantasies. Furthermore, a high proclivity to rape is associated with a semantic network in which concepts of sex and power are closely linked in such a way that power cues are necessary precursors of sexual feelings. Multivariate studies suggest that rape-supportive attitudes interact with noncognitive factors in the etiology of rape. Implications for rape prevention and treatment of rapists are considered. Finally, methodological issues are discussed, and recommendations for future research are given. © 1999 Elsevier Science Ltd*

SEVERAL EPIDEMIOLOGICAL studies indicate an alarming prevalence of rape. In North American samples of college students (e.g., Koss, Gidycz, & Wisniewski, 1987) and in community samples (e.g., Russell, 1984), about one in four women report to have been the victim of a rape or an attempted rape. About 15% of male college students report to have attempted at least once to have intercourse with an unwilling female (Koss et al., 1987). Similar statistics have been reported in other countries in the West (Pollard, 1994). In view of its high prevalence and the serious psychological consequences for victims (Koss & Harvey, 1991), it is safe to conclude that rape is a major cause of psychological distress in women in Western societies.

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An understanding of the etiology of rape is essential to reduce its incidence. Etiologic research has focused on deviant sexual arousal attributable to force and violence (Barbaree & Marshall, 1991), on affective factors such as hostility and lack of empathy for the victim (Darke, 1990; Rice, Chaplin, Grant, & Coutts, 1994), on endocrinological and neurological anomalies (Hucker & Bain, 1990; Langevin, 1990), on exposure to pornography (Murrin & Laws, 1990), and on poor social skills (Segal & Marshall, 1985). However, the available evidence suggests that these factors contribute to rape but that they do not sufficiently account for its etiology. For instance, deviant sexual arousal has long been the dominant concept in rape research, with the underlying assumption that sexual attraction to rape is a form of paraphilia. In a recent meta-analysis, however, G. C. N. Hall, Shondrick, and Hirschman (1993) came to the conclusion that deviant arousal may motivate some rapists but that it is not specific to rapists. Many nonrapists are similarly sexually aroused by depictions of forced sex.

Up to the mid-1980s, only a small number of studies addressed the role of cognitive factors in rape. Segal and Stermac (1990) considered preoccupation with deviant sexual arousal to be the main cause of the fact that research into sexual aggression has yet to experience the cognitive revolution, which has changed theories and research into other types of problematic behavior. Similarly, Marshall, Laws, and Barbaree (1990) noted a "cognitive gap" (p. 4) in our knowledge concerning rape, which they attributed to the tendency to investigate variables that can be measured relatively easily rather than those that are theoretically most interesting.

In recent years, cognitive factors have begun to feature more prominently in empirical research, and at present there is a considerable and growing body of research into the role of different cognitive factors in the etiology of rape. Treatment programs for convicted rapists and interventions aimed at prevention of rape now typically include procedures directed at cognitive factors (e.g., Murphy, 1990; Schewe & O'Donohue, 1993). Understanding the role these factors play in rape is necessary "not only for the effectiveness of these treatment elements to be maximized, but also to be able to specify what meaningful cognitive change following treatment would look like" (Segal & Stermac, 1990, p. 162). In fact, diversity of cognitive factors in current rape research has created some conceptual confusion. Segal and Stermac (1990) noted that, due to the lack of a theoretical framework, "those studies which have examined cognitive factors have done so in a relatively unsystematic fashion" (p. 162).

A useful first step toward a more integrative theoretical framework would be a comprehensive overview of the various kinds of cognitive factors that have been featured in research into rape. The main purpose of this article is to review the research concerning the role of cognitive factors in rape. Furthermore, practical implications for the treatment of rapists and for the prevention of rape are discussed. First, however, methodological problems regarding the operationalization of rape are considered.

THE CONCEPT OF RAPE PROCLIVITY IN RESEARCH INTO RAPE

In studying etiologic factors of rape, it would be ideal to select representative samples of rapists and nonrapists and compare them with regard to the variables of interest. However, finding representative samples of rapists is virtually impossible because most rapists remain undetected. Most incidents of rape are never reported to the police (Koss et al., 1987), and, of those reported, less than 10% result in a conviction (see Darke, 1990). Abel and Rouleau (1990), therefore, correctly concluded that "the ma-

jority of sex offenders are not within the prison system, but ‘on the street’” (p. 10). Furthermore, incarcerated rapists cannot be considered as representative because acquaintance rape is especially underreported and because rapists with a more criminal background are more likely to be convicted and get longer sentences. Therefore, findings of research with convicted rapists may not be relevant to the typical rapist, who, according to Pollard (1994), is “an acquaintance, probably an intimate of the victim, does not have a criminal background, and has not been reported to the police” (p. 172).

Due to these sampling problems, many studies into the etiology of rape have been conducted with student or community samples. This is also true for 23 of the 35 studies reviewed in this article. To identify rapists in these populations, two main types of measures have been used. The first type of measure assesses the future likelihood to commit rape. Typically, likelihood-to-rape (LR) measures are one- or two-item instruments on which participants rate their likelihood to rape given that they could get away with it. Because acquaintance rape is not always defined as such by the rapist, LR measures often also include a question about the likelihood of forcing a woman to do something sexual. The Attraction to Sexual Aggression scale (ASA; N. M. Malamuth, 1989) can be considered to be an improved LR instrument, as it contains 14 instead of just one or two items. To date, however, little use has been made of this instrument in research.

The second type of measure concerns self-report measures of previous sexual aggression. Of these measures, the Sexual Experiences Survey (SES; Koss & Oros, 1982) is used most frequently. The SES is a 10-item instrument that assesses different levels of sexual aggression, ranging from forced kissing to attempted and actual rape. The kind of coercion used can vary from continuous verbal pressure to threats and actual physical force.

Both kinds of rape indicators have limitations. The short LR measures do not actually detect potential rapists but only determine the likelihood of committing rape under the unrealistic condition that punishment will not follow (N. M. Malamuth, 1989). Similarly, the ASA does not identify actual rapists but instead “those men for whom the idea of sexual coercion is sexually arousing, beyond that which would occur with a willing partner” (N. M. Malamuth, 1989, p. 30). A limitation of the SES as a rape indicator is that it assesses rape together with other forms of forced sex. Furthermore, according to the SES, both men who use physical force and men who ply women with alcohol to seduce them to have intercourse are considered to be rapists (Koss et al., 1987). Porter and Critelli (1992), therefore, emphasized the “difficulty of interpreting what subjects’ questionnaire responses mean in terms of their actual experiences with sexual aggression” (p. 537).

In spite of their respective limitations, the LR measures and the SES are generally found to correlate with each other and with other correlates of rape (e.g., N. M. Malamuth, 1989), so that some confidence in their validity as rape indicators is justified. In view of this, Pollard (1994) concluded that these instruments measure a single underlying construct, namely, rape proclivity. We adopt this term for the remainder of this article.

COGNITIVE CORRELATES OF RAPE PROCLIVITY

Attitudes and Beliefs

Of the cognitive determinants of rape, attitudes toward women in general and attitudes concerning intergender relationships, violence, sexuality, masculinity, rape, and

rape victims have attracted the most research. Because results of studies with convicted rapists differ consistently from those obtained with samples drawn from the general public, results obtained with these different samples are reviewed separately.

Studies with samples from the general public. In these studies, individual differences in rape proclivity are typically assessed using one of the previously discussed measures. Individual differences in rape proclivity are predicted from various kinds of attitudes and beliefs, possibly in combination with other variables.

Rape myth acceptance and related attitudes. Rape myths are specific beliefs surrounding rape. An example of such beliefs is that women enjoy being raped or that they could easily resist rapists if they really wanted to. The Rape Myth Acceptance Scale (RMA; Burt, 1980) assesses such beliefs together with an accepting attitude toward rape as expressed in statements such as, "Women who get raped while hitchhiking get what they deserve." In addition, Burt (1980) devised a set of scales that correlate highly with the RMA: the Acceptance of Interpersonal Violence Scale (AIV) for measuring the extent to which force and coercion are regarded as acceptable in intimate and sexual relationships, the Adversarial Sex Beliefs Scale (ASB) for assessing the belief that sexual relationships are fundamentally exploitative, and the Sex-Role Stereotyping Scale (SRS) for measuring traditional attitudes toward the roles of men and women in society.

The Burt scales have been used in so many studies that to render a complete review is beyond the scope of this article; therefore, we mention just a few examples of research involving the Burt scales. Muehlenhard and Falcon (1990) and Walker, Rowe, and Quinsey (1993) conducted principal component analyses on the items of the Burt scales using data obtained in college student samples. The extracted factors were found to predict rape proclivity as measured by the SES (Koss & Oros, 1982). N. H. Malamuth (1986) successfully predicted scores on the SES from Burts' AIV scale. Greendlinger and Byrne (1987) found self-rated LR to be correlated with the RMA. N. M. Malamuth (1989) used a composite of the RMA, AIV, and ASB to predict rape proclivity as measured with the ASA scale (N. M. Malamuth, 1989). In addition, Pollard (1994) cited 10 more studies, which found Burts' RMA, AIV, and ASB scales to be associated with self-reported LR, the SES, or both. An exception is the study of Murphy, Coleman, and Haynes (1986) with a community sample, in which scores on the RMA, ASB, and SRS scales were found to be unrelated to self-rated LR.

In general, it can be concluded that rape proclivity is associated with accepting attitudes with respect to violence, with the attribution of adversarial qualities to sexual relationships, and with the acceptance of rape myths.

Victim blame. The belief that rape victims are responsible for rape because they wear revealing garments, drink too much alcohol, or venture out in deserted places is related to rape myths. Research into victim blame is discussed separately because it connects the concepts of rape-supportive attitudes and deviant sexual arousal and because it may provide an explanation of how acceptance of rape myths leads to rape proclivity.

The inhibition model of sexual arousal posits that in normal men a prosocial mechanism inhibits sexual arousal in the presence of violence (Barbaree & Marshall, 1991). Earlier studies provided evidence that noncognitive factors such as anger and the effects of alcohol have the potential to render rape cues sexually arousing. More recently, it was shown that blaming the victim has the same effect. Sundberg, Barbaree, and Marshall (1991) required college students to listen to both rape and consenting

sex scenarios while their sexual arousal was monitored using a penile circumference measuring device. Victim blame was manipulated by varying the dress of the woman in the rape scenario (revealing or concealing) and the location of the rape (a library or a deserted park). With these two variables, four levels of blame worthiness of the woman in the scenarios were created. Each participant listened to the consenting sex scenario and to one of the four rape scenarios. Disinhibition of sexual arousal to rape cues was operationalized as the difference between the arousal to the consenting sex and the rape scenario. As hypothesized, men in the highest victim blame condition (the victim in a revealing dress walking in a deserted park) showed similar sexual arousal to both scenarios, whereas participants in the other three conditions were far less sexually aroused by the rape scenario than by the consenting sex scenario.

In combination, research concerning acceptance of rape myths and the study of Sundberg et al. (1991) do not only show that holding the victim responsible for rape is associated with rape proclivity. The potential of blaming the victim to disinhibit sexual arousal to forced sex may also explain why men who apportion blame to rape victims are more likely to commit rape.

Macho attitudes. Men who have macho attitudes adhere to a notion of masculinity that idealizes power, toughness, competitiveness, and aggression. These attitudes are usually assessed with the Hypermasculinity Inventory (Mosher & Sirkin, 1984), which consists of subscales for Calloused Sexual Attitudes (e.g., "Get a woman drunk, high, or hot, and she'll let you do whatever you want"), Violence as Manly (e.g., "I still enjoy remembering my first real fight"), and Danger as Exciting (e.g., "I like to drive fast, right at the edge of danger"). Men who have these attitudes might view rape as a way to validate their masculinity.

In a study with college students, Mosher and Anderson (1986) found that the three macho attitudes predicted self-reported use of force to get sex, with Calloused Sex Attitudes accounting for most of the variance. Muehlenhard and Falcon (1990) carried out a factor analysis on the scores of college students relating to several attitude measures. Items from Burt's AIV and from a measure for calloused sexual beliefs constituted one common factor, which the authors identified as a Sexual Dominance factor. This factor predicted student's scores on the SES. In an attempt to simulate rape in the laboratory, Mosher and Anderson (1986) required college students to listen to an audiotaped rape scenario with the instruction to identify with the rapist in the scenario. Afterwards, participants rated their level of sexual arousal and the extent to which they experienced positive and negative emotions while listening to the rape scenario. Macho attitudes failed to predict sexual arousal, but the more macho men did experience less negative emotions such as anger, disgust, or guilt. This study suggests that, to the extent that negative emotions such as disgust and guilt normally inhibit men from committing rape, macho attitudes may indirectly disinhibit rape.

Authoritarian attitudes. The Right Wing Authoritarianism Scale (Altemeyer, 1988) assesses attitudes toward aggressive treatment of outsiders, such as homosexuals, handicapped people, or refugees; attitudes toward submission to authorities; and attitudes toward conventionalism. In a study with students and nonstudents, Walker et al. (1993) predicted rape proclivity from the Right Wing Authoritarianism Scale and from Burt's (1980) attitude scales. Right Wing Authoritarianism predicted self-reported sexual aggression as successfully as did the Burt scales, thereby making a unique contribution to the prediction.

Ajzen and Fishbein (1980) noted that, in predicting behavior from attitudes, the correlation between the two is expected to be lower as the attitude is more general

and the behavior more specific. Therefore, it is especially noteworthy that general authoritarian attitudes predict sexually aggressive behavior as well as, more specifically, rape-related attitudes. This supports the hypothesis that general hostile attitudes toward weaker or deviant groups might contribute to sexual aggression against women (see N. M. Malamuth, Sockloskie, Koss, & Tanaka, 1991).

Studies with convicted offenders. If men in the general population with a high level of rape proclivity have specific rape-supportive attitudes and beliefs, this is to be expected to be the case in convicted rapists as well. In an early study, Feild (1978) examined this issue by comparing rapist's attitudes toward rape with those of citizens, police officers, and rape counselors. To this end, he developed the Attitudes Towards Rape Scale. Notwithstanding the large sample size, no significant differences among rapists, police officers, and citizens were found regarding most attitudes. Although citizens and police were more likely than rapists to argue that women should resist during rape and that rapists should be punished severely, both groups were generally more similar to rapists than to the counselors. Segal and Stermac (1984) found that rapist's attitudes toward women, as measured with a short version of the Attitudes Toward Women Scale (AWS; Spence, Helmreich, & Stapp, 1973), were similar to those of other offenders and nonoffenders of the same socioeconomic status. Sattem, Savells, and Murray (1984) compared sex offenders, other offenders, and nonoffenders using the AWS and two measures for macho attitudes and attitudes toward subordination of women. They concluded that "rather than being more sex-role stereotypical, sex offenders seem to be less stereotypical about themselves and women" (Sattem et al., 1984, p. 857). Although no distinction was made between adult-oriented and child-oriented sex offenders in the primary analysis, subsequent analyses showed that the groups did not differ on any of the attitude measures. In a British study by Harmon, Owens, and Dewey (1995), rapists were found to have less traditional attitudes toward the role of women in society than other imprisoned offenders. No attitudinal differences were found between rapists and a nonoffender control group. Overholser and Beck (1986) compared rapists, other offenders, volunteers with low socioeconomic status, and students who reported a low frequency of dating. No differences between rapists and any of the other groups were found on Burt's (1980) RMA and SRS scales. E. R. Hall, Howard, and Boezio (1986) compared rapists, nonsex offenders, and men from the general community with regard to acceptance of rape myths, rationalizations of aggression, and situations perceived as justifying forced sex. Rapists and nonsex offenders did not differ, but both offender groups were characterized by more rape-supportive attitudes than were men from the general community.

Scully and Marolla (1984, 1985) conducted detailed interviews with 114 convicted rapists and administered attitude scales to these rapists as well as to 75 other offenders. Some rapist's responses clearly revealed acceptance of rape myths and sexist attitudes toward women (Scully & Marolla, 1984) as well as macho attitudes and a preference for impersonal sex (Scully & Marolla, 1985). Typical statements of rapists were, "Rape was the ability to have sex without caring about the woman's response" (Scully & Marolla, 1985, p. 259) or "Women are made to have sex" (p. 261). Although such attitudes can certainly be considered rape supportive, they are not specific to rapists. Marolla and Scully (1986) found no differences between rapists and other offenders on the AWS and on Burt's (1980) AIV Scale.

To summarize, there is surprisingly little evidence of attitudinal differences among rapists, other types of convicted offenders, and nonoffenders. Stermac, Segal, and Gil-

lis (1990) suggested that susceptibility of the self-report attitude measures to social desirable responding may in part explain these results. Honest responses can only be expected if confidentiality is guaranteed. This is easier in university or community settings, where questionnaires are administered to large groups of participants, than in prison settings. Consequently, within prison settings, real attitudinal differences between convicted rapists and other imprisoned offenders might not show in the responses on the questionnaires, due to both group's strong tendency to respond in a socially desirable manner.

To conclude, the failure to detect attitudinal differences between convicted rapists and the various control groups may be explained by invalid measurement, which, therefore, does not allow the conclusion that these differences in fact do not exist.

Rape Knowledge

It is conceivable that some of the attitudes and beliefs, which are associated with rape proclivity, emerge from a lack of knowledge concerning rape and its effects. Feild (1978) found no relationship between statistical knowledge concerning rape and attitudes toward rape. Hamilton and Yee (1990) investigated two different aspects of knowledge relating to rape: beliefs relating to the aversiveness of the rape experience itself and beliefs about the psychological aftereffects. As hypothesized, less knowledge about the psychological aftereffects of rape and about the aversiveness of rape was associated with more rape-supportive attitudes and with a higher self-reported LR.

Correlational studies such as these do not provide information about the direction of causality. Therefore, it is not clear whether rape proclivity is influenced by knowledge concerning rape or that men with a high proclivity to rape get less information about rape because they are not the kind of men with whom women like to talk about their experiences as a victim of rape. There is another explanation, however, for the results of Hamilton and Yee (1990); men with a desire to rape might find justification for their desire by suppressing and denying the facts of rape.

For the prevention of rape, it is important to establish whether knowledge about the effects of the rape experience on the victims would prevent men from raping. At least in one category of rapists, there is some evidence that this is not the case. Darke (1990) argued that many rapists are motivated by the wish to humiliate and hurt the victim. Furthermore, several studies (e.g., N. M. Malamuth et al., 1991) have suggested that hostility toward women is a causal factor in rape. It is unlikely that knowledge about the effects of rape on the victims will discourage men from committing rape when they are motivated by the desire to humiliate and hurt their victims.

Perception of Women's Communications

Social perception requires active selection and processing of information. Stereotypical ideas and prejudices can influence social perception and may lead to perceptual biases that in turn influence behavior (Fiske & Taylor, 1991). In the context of rape, three hypotheses have been formulated concerning the nature of rapist's misperceptions of women.

The overperception hypothesis states that sexual aggressors tend to misperceive women's friendly behavior as seductive and assertive behavior as hostile. Murphy et al. (1986) tested this hypothesis in a community sample. Participants were shown videotaped interactions in which men initiated social interactions with women. The women

responded in a hostile, assertive, friendly, or seductive way. Participants had to rate the women's behavior with respect to a list of adjectives. A seduction discrimination index and a hostility discrimination index were developed to measure the extent to which friendly behavior was mislabeled as seductive and assertive behavior as hostile. These two heterosocial perception indexes and several well-established correlates of rape proclivity, including Burt's (1980) attitude scales, were used to predict self-reported sexual aggression. The hostility discrimination index emerged as the best single predictor of sexual aggression and also accounted for most of the variance in the final multiple regression analysis. The seduction discrimination was found not to contribute to the prediction.

According to the positivity bias hypothesis, rapists misperceive negative dismissive cues from women as positive and encouraging in ambiguous situations. Lipton, McDonel, and McFall (1987) tested this hypothesis in a sample of incarcerated rapists, violent nonrapists, and nonviolent nonrapists. The Test of Reading Affective Cues (TRAC) was developed to measure the perceptual bias. In this test, participants are shown videotaped heterosocial interactions in first-date situations and in intimate relationships. In each interaction, one partner (the nontarget) displays a positive affect while the other partner (the target) emits cues from one of the five affect categories: romantic, positive, neutral, negative, or bad mood. Participants are asked to identify the kind of cue expressed by the target. As predicted, rapists made significantly more mistakes when interpreting female cues in the more ambiguous first-date interactions. No between-groups differences were observed with regard to intimate relationship interactions and first-date interactions when the male cues had to be evaluated. Rapists were especially likely to misperceive women's negative cues as positive. McDonel and McFall (1991) used the TRAC to predict self-rated LR in a sample of college students. Similar to the results of Lipton et al. (1987), accuracy of the interpretation of cues was negatively correlated with LR. Again, difficulties in the interpretations of cues in men high in rape proclivity were specific: Only female cues were mislabeled. Together, the studies of Lipton et al. (1987) and McDonel and McFall (1991), with different populations and different measures of rape proclivity, suggest that rapists differ from other men in that they misperceive women's dismissive cues as encouraging.

Finally, the suspicious schema hypothesis states that rapists generally mistrust women's communications, independent of the type of affective cues emitted. N. M. Malamuth and Brown (1994) tested this hypothesis in a sample of college students who were shown videotaped interactions of heterosexual couples in which the woman clearly expressed hostility. Following the video, the students were asked to indicate whether they considered this behavior typical for women in general and whether they believed that the woman in the video expressed her feelings honestly. Mistrusting the woman's affective expression and generally perceiving women as hostile was interpreted as indicative of a suspicious schema. In accordance with the suspicious schema hypothesis, harboring a suspicious women schema predicted self-reported sexual aggression as assessed with the SES (Koss & Oros, 1982).

N. M. Malamuth and Brown (1994) tested these three hypotheses in a single study using the stimulus material of Murphy et al. (1986). They did not use the seduction discrimination index or the hostility discrimination index, but they did ask their participants to indicate the extent to which they viewed the women in each of the four heterosocial interaction scenarios as hostile, assertive, friendly or seductive. Men higher in rape proclivity perceived both the friendly and the seductive women in the videotaped interactions as hostile. This result could not be explained by either the

overperception hypothesis or by the positivity bias hypothesis. The latter predicts a perceptual bias only if a woman emits negative cues. The former explains why a friendly woman is perceived as seductive, not why she is perceived as hostile.

In summary, it is concluded that misperception and mislabeling of women's communications in heterosocial situations are clearly associated with rape proclivity. It is particularly interesting that, despite the difficulties of research in prison settings mentioned earlier and despite their small sample sizes, Lipton et al. (1987) found differences among nonoffenders, incarcerated rapists, and other offenders. This result may be due to the fact that tests for perceptual accuracy like the TRAC are optimal performance measures, which are less susceptible to social desirability than self-report measures.

Coercive Sexual Fantasies

Coercive sexual fantasies feature prominently in theories about the etiology of rape but have attracted comparatively little empirical research. In the conditioning theory of rape (Laws & Marshall, 1990), coercive sexual fantasies are hypothesized to lead to a deviant pattern of sexual arousal to aggression, which is thought to be the main motivational force in rape. By entertaining coercive sexual fantasies during masturbation, sexual arousal becomes conditioned to coercive sexual fantasies. Furthermore, sexually aggressive fantasies serve as models for rape scenarios that are likely to be acted out when inhibitions are sufficiently eroded. Sexual aggressive experiences in turn provide the basis for further fantasies, thereby strengthening the deviant pattern of sexual arousal. This theory does not explain why so few men develop the deviant pattern of sexual arousal to force and violence, given that one in three men generate rape fantasies (Crepault & Couture, 1980). In contrast to Laws and Marshall (1990), who attributed the initial association of sex and aggression in sexual fantasies to violent pornography, Prentky and Burgess (1991) assumed that sexually aggressive fantasies are caused by internal factors. According to their theory, early experiences lead to an inner world of violent thoughts that forms an internal drive for sexually aggressive fantasies. These fantasies are supposed to differ from the rape fantasies of normal men because they are not triggered by external stimuli and because they are preoccupying and recurrent. Like Laws and Marshall (1990), Prentky and Burgess (1991) assumed that rapists act out their fantasies when inhibitory mechanisms are weakened.

What is the empirical evidence of the role of coercive sexual fantasies in the etiology of rape? In an exploratory study by Rokach, Nutbrown, and Nexhipi (1988), no differences between sex offenders and other offenders were found with regard to aggressive content of sexual fantasies. Greendlinger and Byrne (1987) predicted rape proclivity from several self-report measures, including Burt's (1980) RMA Scale and a questionnaire assessing the frequency that the participants entertained various coercive sexual fantasies. As predicted, coercive fantasies were significantly correlated with scores on an LR measure and with past sexual aggression as assessed with the SES (Koss & Oros, 1982). Furthermore, sexual fantasies accounted for more variance than any other independent variable and made a unique contribution to the prediction of both measures of rape proclivity. However, this study cannot rule out the possibility that coercive fantasies are a result rather than a cause of sexual aggression.

In summary, although different theories state that coercive sexual fantasies constitute an important factor in the etiology of rape, Greendlinger and Byrne (1987, p. 3)

correctly concluded that “the degree to which any type of forced sex fantasy is subsequently translated into overt coercive behavior is presently unknown.”

Self-Talk

Unconscious and involuntary thoughts are known to influence behavior of depressed individuals. To investigate the possibility that spontaneously occurring cognitions might also contribute to rape, Porter and Critelli (1994) required college students to listen to one of two types of audiotaped date scenarios: (a) a consensual scenario in which a man and a woman were depicted in conversation, followed by sexual interaction and consensual intercourse, and (b) a date-rape scenario in which the woman resisted in the sexual interaction, and intercourse was forced on her. The scenarios were divided into segments. After each segment, the audiotape was stopped and the participant reported his spontaneous thoughts. At the end of the scenario, participants gave estimates of the sexual arousal they had experienced while listening to the tape. The inhibitory valence of the articulated thoughts was rated according to a coding system. For example, negative evaluations of the scenario characters were coded as inhibitory and statements with a reference to sexual acts as disinhibitory. Rape proclivity was assessed using the SES (Koss & Oros, 1982), and the sample was divided into a low-SES, medium-SES, and high-SES group. For both scenarios, inhibitory self-talk was associated with lower self-reported sexual arousal. As hypothesized, only those in the low-SES group produced more inhibitory self-talk in the date-rape scenario than in the consensual scenario condition. In addition, only in that subgroup did the date-rape scenario create less sexual arousal than the consensual scenario. Further analysis of the arousal data revealed that differences in arousal between SES-groups were mediated by valence of self-talk.

The finding that “on-line” self-verbalizations have the potential to inhibit sexual arousal is interesting because it sheds some light on the inhibitory mechanisms in normal men. Barbaree (1990) assumed that “inhibition might come about through the operation of a complex cognitive-psychophysiological response” (p. 127) but conceded that “the mechanism by which inhibitory cues come to reduce arousal is not known” (p. 127).

Automatic Mental Power-Sex Association

The notion that rapists associate sex and power is not new. In interviews with convicted rapists, Groth and Birnbaum (1979) found the need to dominate a woman to be a common motive among rapists. Darke (1990) expressed the feminist position “that all sexual assaults are perpetrated to satisfy the aggressor’s desire for, and to enhance his feeling of power” (p. 58). Although little research has been carried on mental power-sex associations, results obtained so far are interesting. Using an illusory correlation methodology, Pryor and Stoller (1994) found evidence that the cognitive concepts of power and sex are more closely associated in men who engage in sexual harassment than in other men. Bargh, Raymond, Pryor, and Strack (1995) conducted two experiments with student samples to find out whether such a semantic power-sex association differentiates between men who are high and men who are low in rape proclivity. Men who associate power with sex may be predisposed to aggressive acting out when they are sexually stimulated or, conversely, to sexual acting out when they are in a position of power over a woman. In the first experiment, participants were exposed to target words on a screen and were required to pronounce the words as

quickly as possible. Immediately before the target word, a prime word was presented at a subliminal level. Prime and target words were either (a) related to sex or to power or (b) were neutral in content. A reduction of the reaction time between presentation and pronunciation of the target word was considered to be indicative of an automatic mental association between the prime and the target concepts. The association is considered to be automatic because the prime word could not be identified consciously and because the time between presentation of prime and target was too short for a conscious processing of the prime word. Rape proclivity was assessed with the ASA Scale (N. M. Malamuth, 1989). As predicted, a power-sex association was only found in participants who were high in rape proclivity. The power-sex association was unidirectional in the sense that the prime words relating to power activated the sex constructs and that the opposite was not true.

If the sex-related cognitive concepts of a male are automatically activated by power cues, it is likely that he will find a woman more sexually attractive when his power-related mental concepts have been activated in a priming procedure. In a second experiment with a different student sample, this hypothesis was tested. The participants were required to complete fragments of words in cooperation with a female confederate of the research. As manipulation of the activation of the power concept, the words were either power related or neutral. At the end of the session, students rated attractiveness of the female confederate and desirability of future interaction. The predicted interaction was found: Only men with high proclivity to rape rated the women as more attractive when their power concept had been activated. When this was not the case, they perceived the female confederate as less attractive than the other men.

Together, the two experiments by Bargh et al. (1995) suggest that, in men high in rape proclivity, in contrast to other men, sexual attraction to a woman is dependent on the triggering of their power-related concepts. Triggering of power-related concepts may happen if men are in a dominant position with respect to a woman (e.g., a position of authority or of dominance through physical strength). Bargh et al. (1995) even concluded that "it is only when these men have relative power over a woman that they find her as attractive as do other men" (p. 777). The cognitive mechanism investigated in these two experiments could explain why dominating and forcing a woman is sexually arousing for rapists but not for other men who do not possess the cognitive power-sex association.

INTERACTIONS BETWEEN COGNITIVE AND NONCOGNITIVE FACTORS

As mentioned before, the prevailing concepts in early theories of rape are physiological sexual arousal, affective factors such as hostility and depression, and personality factors. For some of these factors, there is considerable evidence that they are important in the etiology of rape. On the other hand, correlations between cognitive variables and rape proclivity are generally only moderate, which suggests that cognitive factors alone cannot account for rape. Therefore, the question arises as to how cognitive and noncognitive factors interact in the etiology of rape.

Two Multivariate Accounts for the Etiology of Rape

The quadripartite model of G. C. N. Hall and Hirschman (1991) highlights the role of four kinds of etiologic factors: (a) cognitive factors such as belief in rape myths, rape-

supportive attitudes, misperception of women, and underestimation of the negative consequences of perpetrating rape; (b) a deviant pattern of physiological sexual arousal to forced sex; (c) affective states like anger and hostility; and (d) more enduring anti-social personality factors.

The quadripartite model does not assume specific interactions between cognitive and noncognitive factors but rather distinguishes subtypes of rapists that differ with regard to the most prominent causal factor. According to G. C. N. Hall and Hirschman (1991), the subtype of rapist in which cognitive factors are of primary etiologic importance is less impulsive and violent than the other subtypes. This subtype is generally supposed to commit acquaintance rape.

Another multivariate theory that integrates several lines of rape research is Marshall and Barbaree's (1990) integrated theory of rape. This theory is based on the assumption that sex steroids activate both sex and aggression and that the ability to separate these has to be learned from the age of puberty. How well adolescents acquire this ability depends on their development during childhood. Boys with low self-esteem, an inability to experience intimacy due to insecure attachments in childhood, a lack of social skills, and with an inability to feel empathy are expected to have difficulties in learning the prosocial responses necessary to separate sex and aggression. In such cases, cognitive factors play an important etiological role. Marshall and Barbaree (1990) assumed that:

those adolescents who by their family upbringing have been left poorly prepared to function effectively will seize out those messages which serve their needs. For boys whose self-esteem is low, those attitudes and behaviors which confer on them a sense of power will be more readily accepted than messages conveying egalitarian perspectives. (p. 264)

Due to rape-supportive attitudes, inhibition of aggression in sexual contexts remains weak. When disinhibited by anger, the effects of alcohol, or by sexual arousal, these men are likely to fuse sexual and aggressive impulses in rape.

In summary, both multivariate theories state that cognitive factors are important in the etiology of rape. The integrated theory of rape is more explicit about how cognitive and noncognitive factors interact. In contrast to the quadripartite model, however, it does not account for role of cognitive factors in different subtypes of rapists. Moreover, both theories have yet to be tested empirically.

The Confluence Model of Sexual Aggression

N. M. Malamuth et al. (1991) developed a multivariate model of sexual and nonsexual coerciveness against women and tested it in a cross-sectional and in a longitudinal study. This so-called confluence model is discussed only in so far as it relates to rape proclivity. According to this model, several factors have to operate simultaneously to bring about rape. The predictor variables of rape proclivity are organized into two interacting paths: the hostile masculinity path and the sexual promiscuity path. Hostile masculinity is conceptualized as a composite of hostility toward women and a type of masculinity comparable to the macho attitudes discussed earlier. In the hostile masculinity path, hostile masculinity mediates the effect of Burt's rape-supportive attitudes on rape proclivity. It is remarkable that the hostile masculinity path mainly involves cognitive or, more precisely, attitudinal variables. In the sexual promiscuity path, a violent and abusive early home environment predicts early delinquency, which is opera-

tionalized as association with delinquent peers and running away from home. Early delinquency leads to an early adoption of adult roles, which is expressed in precocious sexual behavior and sexual promiscuity. Sexual promiscuity in turn predicts rape proclivity.

The sexual promiscuity factor and the hostile masculinity factor are found to interact: Sexual promiscuity leads to rape proclivity only in men who have the cognitive characteristics featured in the hostile masculinity path. Such interaction was found to be stable over a period of 10 years (N. M. Malamuth, Linz, Heavey, Barnes, & Acker, 1995).

The only cognitive variables in the confluence model concern rape-supportive attitudes. Therefore, it remains unclear how the other previously discussed cognitive factors interact with noncognitive factors in the etiology of rape. Because Murphy et al. (1986) and N. M. Malamuth and Brown (1994) both found that misperceptions of women's communications predict rape proclivity better than the Burt attitudes, it is likely that this factor will account for a considerable percentage of variance in multivariate models.

IMPLICATIONS FOR RAPE PREVENTION AND THE TREATMENT OF RAPISTS

The ultimate goals of attempts to understand rape are the reduction of its incidence and the prevention of the suffering it causes. There are two main approaches to achieve these aims: (a) preventing potential rapists from committing rape and (b) treating convicted rapists in order to prevent recidivism. In the following, rape prevention and treatment of rapists are discussed with respect to the cognitive factors reviewed before.

Rape Prevention in the General Population

In their recent review of the rape prevention literature, Schewe and O'Donohue (1993) argued that, generally, programs aimed at rape prevention do not sufficiently take knowledge about the etiology of rape into account. In view of this, the question arises as to how rape prevention can benefit from the results of the etiological research discussed in this article.

Of the cognitive factors discussed, belief in rape myths and insufficient knowledge about the consequences of rape appear to be the most obvious subjects to include in an intervention aimed at rape prevention. Hamilton and Yee (1990) showed that men who are aware of the severe aftereffects of rape on the victim have a lower proclivity to rape. On the other hand, the belief that women enjoy being raped and create situations that encourage rape is found to be related to higher levels of rape proclivity. Consequently, providing knowledge about the reality of rape and victimization might be an effective strategy for rape prevention. Little is known about the effectiveness of such educational interventions. However, Fischer (1986) found that men who participated in a course about rape laws became less accepting of rape.

As discussed earlier, men high in rape proclivity have specific attitudes toward sexual relationships, interpersonal violence, women, and masculinity. Although there is considerable knowledge about strategies to change attitudes (e.g., Perloff, 1993), according to Gilbert, Heesacker, and Gannon (1991), current rape prevention approaches make very little use of this knowledge. An exception to this is provided by

Gilbert et al. (1991), who developed a training course aimed at changing attitudes toward violence, male dominance, and adversarial sexual relations. The course makes use of role play and group discussions to emphasize negative intrapsychic and social consequences of rape-supportive attitudes. In a study with college students, attitude change at the end of the course significantly exceeded that of a control group and was found to be stable over a 1-month period.

Many studies reviewed in this article were conducted with college students of about 22 years of age. Incidence of rape in this population suggests that rape education should be started at schools and colleges in order to reach men at an early age. Sport teams and the military have also been suggested as target populations (Herman, 1990).

Several authors have claimed that violent pornography encourages calloused attitudes toward sex, negative attitudes toward women, and acceptance of rape (for an overview, see Murrin & Laws, 1990). Laws and Marshall (1990) argued that violent pornography is instrumental in creating the association between violent fantasies and masturbation, causing deviant sexual preferences for violent sex. N. H. Malamuth and Check (1985) found greater acceptance of the rape myth that women enjoy being raped after listening to description of a sexually aggressive interaction in which the woman became sexually aroused. This is the way women are typically depicted in pornography that combines sex and aggression. Because violent pornography is likely to create rape-supportive cognitions and because it is widely in demand despite laws censoring it, Herman (1990) argued that an effective rape-prevention strategy would have to deal with the organized sex industry.

The Treatment of Convicted Rapists

Marshall and Barbaree (1990) found the treatment of rapists to be relatively unsuccessful compared with that of, for instance, child molesters. Marshall (1993) therefore concluded that “obviously, we have to reconsider our approach to the treatment of rapists” (p. 145). Considering the evidence reviewed in the present article, the following suggestions are made.

1. Due to socially desirable responses, most of the studies with convicted rapists do not prove the importance of rape-supportive attitudes as a determinant of rape. However, the interviews Scully and Marolla (1984, 1985) conducted with convicted rapists suggest that rape-supportive attitudes do play a role in rape. Moreover, studies in community or student samples with guaranteed anonymity do provide support for the assumption that convicted rapists or men with a high rape proclivity have rape-supportive attitudes—findings that could not be replicated in the nonanonymous prison studies. Combining the research in rape convicts and in student and community samples, we may conclude that interventions aimed at attitude modification that are based on empirically supported theories of attitude change (e.g., Gilbert et al., 1991) might be effective for convicted rapists. According to Marshall (1993), therapists unfortunately seem to ignore this possibility.
2. As discussed before, different hypotheses exist about the exact nature of heterosocial misperceptions. For the treatment of rapists, however, it is important to determine whether women are misperceived due to deficits in decoding skills (as suggested by Lipton et al., 1987) or due to prejudices against women (as pro-

- posed by N. M. Malamuth & Brown, 1994). Changing prejudices would require cognitive restructuring and attitude modification such as that employed by Gilbert et al. (1991) rather than the training of skills.
3. Providing knowledge about the aversiveness of the rape experience and the psychological aftereffects on the victim may be appropriate for some but not all rapists. For those whose motives are primarily sexual, rape knowledge might serve as an inhibitor. However, if the rapist is motivated by the wish to humiliate and hurt women, information about the aversiveness of the experience for the victim is unlikely to discourage him from engaging in rape.
 4. With regard to coercive sexual fantasies, it is essential to disassociate violent fantasies and sexual arousal. Laws and Marshall (1990) suggested several techniques to achieve this aim, such as covert desensitization, olfactory aversion, masturbatory satiation, and masturbatory reconditioning. However, effectiveness of these techniques depends on the participant totally relinquishing violent pornography. This requires a strong motivation to change.
 5. Another possible focus of treatment programs is self-verbalization during real or imagined sexual contacts. Porter and Critelli (1994) suggested that if a rapist can discriminate between consensual and nonconsensual sex he may be trained to recognize his self-talk when it occurs and to replace it by inhibitory self-statements. Self-monitoring and registration methods could improve awareness of disinhibitory self-talk. Replacing it by inhibitory self-verbalizations could be facilitated by self-reward techniques.
 6. Finally, there is support for the existence of an involuntary cognitive association between the concepts of power and sex, causing men with a proclivity for sexual aggression to be sexually attracted to women only if they are in a position of power with regard to them. Because this mechanism is supposed to operate automatically and at an unconscious level, one would expect that it cannot be changed easily. Bargh et al. (1995), however, optimistically assumed that sexually aggressive men can be made aware of the existence of their bias and subsequently counteract its influence.

In the interest of conceptual clarity, the different treatment strategies were discussed as if the cognitive target factors operate independently and in isolation. However, we presented evidence that the cognitive factors interact with each other and with other noncognitive factors. Changes in one area are therefore likely to cause changes in related areas. As Murphy (1990) noted, "a number of additional procedures used in therapy, such as victim empathy training, modules on victimization issues, sex education, and even procedures for reducing arousal, could all potentially modify cognitive distortions" (p. 340).

With regard to all treatment approaches, it should be kept in mind that success depends heavily on the rapist's commitment and motivation to change—a factor that cannot be taken for granted. Therefore, Marshall (1993) emphasized the importance of efforts to increase and maintain treatment motivation.

DISCUSSION

Just a few years ago, Segal and Stermac (1990) considered the role of cognitive factors in rape to be "virtually unstudied" (p. 161). The present review demonstrates that this

statement is no longer true. More and more studies have focused on cognitive factors in the etiology of rape. It has been shown that rape proclivity is associated with a variety of cognitive variables and that cognitive and noncognitive factors interact in the etiology of rape.

Despite considerable recent progress, research into the role of cognitive factors in rape has a long way to go. For certain cognitive variables, the evidence that links them to rape comes from very few studies. This is particularly the case with inhibitory self-verbalizations and the automatic power-sex association in the cognitive network. Although research into these theoretically intriguing factors has started only recently, promising results have already been obtained. We expect in the near future, therefore, that further studies will focus on these cognitive factors. Research into the role of misperceptions of women's communications is equally promising, because convincing results have been obtained in the past and because several groups of researchers are exploring the exact nature of these perceptual biases.

Methodological Issues

Research into etiological factors in rape is subject to several methodological problems. Further progress may require adaptations of research methods, and, in fact, some of the studies reviewed herein can serve as examples of such methodological innovation.

Because convicted rapists form a small and unrepresentative subgroup of rapists, most research into the etiology of rape has been conducted with students or with men from the general community rather than with identified and convicted rapists. To develop effective treatment programs for convicted rapists, it is also necessary to investigate the factors that lead these men to commit rape, even if this knowledge is of limited relevance to the entire population of rapists.

A major concern in research involving convicted rapists is the danger of socially desirable responding. This problem is especially serious when studies rely on self-report measures, as in research concerning attitudes, rape knowledge, and coercive sexual fantasies. In fact, it may be due to socially desirable responding that research into rape-supportive attitudes has failed to detect differences between convicted rapists and control groups.

There are several possible approaches to cope with the problem of social desirability. Stermac et al. (1990) suggested development of more subtle and less obtrusive measures. This, however, is not easy to realize because it is difficult to conceal the real purpose of administering a rape-related measure from convicted rapists, who are likely to be quite sensitive with regard to the topic. Another approach would be to make use of measures of social desirability in order to adjust for this factor. However, if respondents invariably answer in a socially desirable way, as might be expected in convicted rapists, this factor cannot effectively be controlled. The third strategy to cope with the problem of social desirability relies on optimal performance measures that render socially desirable responding impossible. Such measures have been employed successfully in a number of studies. For instance, in studies of perceptual biases, participants were required to recognize cues emitted by women. In research into associations between the concepts of power and sex, participants had to pronounce sex-related stimulus words as quickly as possible after power-related words were presented to them at a subliminal level. For assessment of attitudes and beliefs, however, optimal performance measures are not suitable. To assess attitudes and beliefs, self-

report instruments are indispensable. To minimize socially desirable responses in administering self-report instruments, it is essential to take clear steps that protect the confidentiality of the testee. Kaplan (1985; as cited in Abel & Rouleau, 1990) demonstrated that the guarantee of anonymity is not sufficient to elicit honest responses from convicted offenders. In her study, offenders were interviewed twice—once within the criminal justice system and later in a mental health setting. Although anonymity was promised in both cases, in the first interview offenders revealed only 5% of the sex crimes they reported in the second interview.

Almost all of the studies reviewed herein utilized correlational designs that involved comparisons of men high and men low in rape proclivity on the cognitive variables of interest. As mentioned before, such correlational designs do not allow conclusions about the direction of causality. This problem is especially serious in cases where it can be expected that the cognitive variable of interest is influenced by earlier rape experiences. For example, coercive sexual fantasies are as likely to follow from earlier acts of sexual coercion, as they are to be a cause of sexual coercion. Similarly, the belief that women enjoy being raped may be a justification after the fact rather than a causal factor. Experimental or quasi-experimental designs can be used to investigate direction of causality, but these require a method to measure sexual aggression in the laboratory setting in a way that is both ethically acceptable and valid. Because rape can obviously not be observed in the laboratory, G. C. N. Hall and Hirschman (1993) developed a laboratory analog of sexually aggressive behavior in which participants are given the opportunity to present erotic stimuli to a female confederate of the researchers who is presented as an unwilling participant. Although presenting erotic stimuli is clearly very different from perpetrating rape, G. C. N. Hall and Hirschman (1994) found some evidence for the validity of their laboratory analog as a measure for sexual aggression. Men who were more sexually aggressive in real-life situations showed more erotic stimuli to the unwilling female confederate than did the other men. Using valid laboratory analogs of sexual aggression, contribution of such factors as specific attitudes toward women or the perception of women as hostile or seductive to sexual aggression could be investigated.

Research programs that involve correlational as well as experimental studies could provide particularly strong support for the role of cognitive variables in the etiology of rape. The following example illustrates this. Using a correlational design, Bargh et al. (1995) showed that men who admitted to sexually aggressive acts in the past are characterized by a cognitive power-sex association. If it could be shown experimentally that activation of sex concepts due to priming by power cues actually causes sexually aggressive behavior, this would provide convincing support for the hypothesis that a power-sex association is an important etiological factor in rape.

Accounting for Differences Between Subtypes of Rapists

In all studies of cognitive determinants of rape, men high in rape proclivity and convicted rapists are generally treated as though they are members of a homogeneous group, although several authors have emphasized differences between types of rapists (Barbaree & Marshall, 1991; G. C. N. Hall & Hirschman, 1991; Knight & Prentky, 1990). The typology of Knight and Prentky (1990), based on research with convicted rapists, distinguished no less than nine subtypes of rapists that are supposed to differ in their motives to engage in rape. As rapists differ with regard to motivational factors,

it is likely that they do not form a homogeneous group with regard to the cognitive factors discussed in the present article.

Differences between categories of rapists could explain the finding that rape proclivity only correlates modestly with measures of single cognitive variables. For example, correlations between measures of rape proclivity and Burt's (1980) attitude scales hardly exceed the .30 mark. To demonstrate the relationship between cognitive variables and rape proclivity, it would be useful to know which cognitive factors are of importance in the various subgroups of rapists.

In the development of treatment programs, differences between types of rapist should also be taken into account. Rapists who have developed a deviant pattern of sexual arousal due to excessive aggressive sexual fantasies may require a different treatment than those whose acts of rape are mainly caused by their perception of their victim as seductive and encouraging sexual advances. Clearly, future research into the role of cognitive determinants of rape calls for a better distinction between various types of rapists. Murphy (1990) referred to this when he stated, "until we can clearly measure and define the types of cognitive distortions used by various offenders, it will be impossible to determine the impact treatment programs may have on such distortions or even the need for such programs" (p. 336).

The Impact of Etiological Research Into the Treatment of Rapists

As mentioned before, the ultimate purpose of investigating the etiology of rape is to reduce its incidence and prevent the suffering it causes. Ignoring results from etiological research can lead to questionable treatments. For instance, many treatment programs involve social skills training (McFall, 1990; Muehlenhard & Falcon, 1990), although there is evidence that rapists do not differ from other men with regard to general heterosocial skills (see Pollard, 1994; Segal & Stermac, 1990). A study by Muehlenhard and Falcon (1990) even suggested that men who entertain rape-supportive ideas might use their newly acquired social skills to coerce reluctant women into having sex. Muehlenhard and Falcon (1990, p. 256) concluded that "improving a rapist's hetero-social skills without changing his attitudes might simply add verbal sexual coercion to his repertoire of coercive sexual behavior." On the other hand, it would be simplistic to view the training of heterosocial skills as generally contraindicated for rapists, because rapists appear to have deficits in their ability to decode heterosocial cues emitted by women. Training of such heterosocial decoding skills may constitute a valuable contribution to the treatment of certain rapists.

In conclusion, studies of cognitive factors that determine the behavior of rapists have already provided useful suggestions to improve the effectiveness of the treatment of rapists. However, further research in this area is necessary to increase our understanding of the etiology of rape and to devise treatment programs that are better tailored to the specific cognitive factors that characterize rapists.

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