# Predicting Laboratory Aggression against Female and Male Targets: Implications for Sexual Aggression

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This study assessed the ability of several variables to predict men's laboratory aggression against female and male victims. The predictors were chosen on the basis of their associations with sexual aggression against women in naturalistic settings. On the whole, these variables successfully predicted laboratory aggression against the female target but were not similarly related to aggression against the male. The data supported the view that specific factors uniquely contribute to aggression against women. It is suggested that, at least in part, such aggression needs to be examined within the larger context of sexist relations. © 1988 Academic Press, Inc.

What type of factors underlie men's sexual aggression against females (e.g., rape)? Some theorists have emphasized nonspecific factors whereas others have stressed the role of specific ones. Both the nonspecific and specific factors discussed in the literature may be grouped into two types. The first category of nonspecific variables are instigators that increase the likelihood of violence directed against any target. Examples include a "hot temper" and a subculture that condones the use of violence as a means of attaining goals or solving conflicts (e.g., Amir, 1971; Baron, Strauss, & Jaffee, 1988). A second group of nonspecific factors are general disinhibitory variables not directly connected with violent behavior, but likely to influence such acts as well. Examples of these are peer support for any antisocial acts, sensation-seeking tendencies, and a relative lack of concern about social desirability (e.g., Ageton, 1983).

In regard to specific factors, one type involves sexual impulses and gratification, whereas the second type is rooted in men's desire for power over women and in misogyny. An example of models emphasizing the

This research was supported by grants from the Social Science and Humanities Research Council of Canada. Portions of this paper were presented at the 1984 Annual Meetings of the American Psychological Association, Toronto, Canada. Correspondence concerning this article should be addressed to Neil M. Malamuth, Communication Studies, 334 Kinsey Hall, University of California at Los Angeles, Los Angeles, CA 90024.

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former are sociobiological approaches theorizing that men who are relatively unsuccessful in obtaining sexual access to women by other strategies will be more prone to use force (e.g., Thornhill & Thornhill, 1983; Thornhill, Wilmsen, & Dizinno, 1986). Research approaches emphasizing the latter type have focused on several factors. Attitudes supporting violence against women (Burt, 1980) and sexual arousal in response to aggression against women (e.g., Abel, Barlow, Blanchard, & Guild, 1977) have been studied the most. Also proposed as critical factors are the desire to dominate women (Groth, 1979; MacKinnon, 1987; Schechter, 1982) and resentment of females caused by rejection and/or domination by important women in the person's life, particularly his mother (Cohen, Garofalo, Boucher, & Seghorn, 1977; MacDonald, 1971).

#### Previous Research

Varied empirical studies are relevant to the question of nonspecific vs. specific causes of aggression against women. Several studies indicate that among prison populations rape is frequently not an isolated behavior but part of a general pattern of aggression directed against other people and property (e.g., Amir, 1971; Alder, 1985; Nagayama-Hall & Proctor, 1987). Although considerable caution must be exercised in generalizing from these samples (see Alder, 1985) similar data come from a nonprison sample obtained by Ageton (1983). She conducted a longitudinal study to gauge the extent to which a variety of measures including those reflecting general delinquency, attitudes about rape, and sex-role stereotyping predicted sexual aggression. Subjects, 11 to 17 years old drawn from a representative national sample, were interviewed in several consecutive years during the late 1970s. Ageton found that the general delinquency factors, such as peer support for antisocial behavior, were highly predictive of sexual assault. Attitudes regarding rape also enabled some discrimination between sexual aggressors vs nonaggressors, but sex-role stereotyping did not. She suggested that the same set of factors explains sexual assault and other delinquent behaviors. She also suggested that future research should more vigorously attempt to identify factors that uniquely contribute to sexual aggression.

Although it is well-established that sexual aggression is often part of a general pattern of antisocial behavior, there is some empirical support for the role of specific factors. Even among the prison studies reported above, there are data showing that sexual offenders may be particularly likely to re-offend for the same act rather than being equally likely to commit any violent offense (e.g., Nagayama-Hall & Proctor, 1987). Moreover, there is growing literature that suggests that sexual aggression toward females may be linked to factors specifically related to the fusion of sexuality with elements of aggression and dominance over women.

For example, Heilbrun and Loftus (1986) provided correlational data consistent with the hypothesis that sexual sadism may be a motivating force for sexual aggression, even among college students. In addition, Quinsey, Chaplin, and Upfold (1984) found that rapists were more sexually aroused than control groups by rape stories and by nonsexual violence directed against a woman. There were no significant differences for similar aggressive stories involving a male target.

# Disentangling Motives

In naturalistic settings there are considerable difficulties in disentangling the motives underlying sexual aggression, particularly for specific factors that fuse sexual and aggressive elements. It is difficult to establish whether aggression is instrumental to obtaining sex or whether sex is a vehicle for the expression of aggressive and dominance motives. For example, it might be argued that rapists are relatively highly aroused by rape depictions because they have a high sex drive and their arousal is consequently not easily inhibited. Therefore, it is not inhibited by aggressive elements in rape depictions presented in the laboratory nor by the woman's nonconsent in naturalistic settings. Alternatively, it might be argued that arousal to rape and the carrying out of this act are both due to a desire to dominate women or to similar characteristics.

The measure of aggression used in the present research may help disentangle the fusion between sexual and aggressive elements. Here we can assess whether certain characteristics predict aggression against a woman when it does not serve any sexual goals. If such prediction were found, it would suggest that it is not due to a desire for sexual gratification nor is it the result of a "high sex drive."

The present study also helps clarify the interpretation of earlier laboratory research. Malamuth (1983) found that men's attitudes about "real-world" aggression (primarily against women) and their degree of sexual arousal to rape depictions successfully predicted their levels of aggression against a woman in a laboratory setting. These data were interpreted as supporting the construct validity (Cronbach & Meehl, 1955) of a nomological network composed of (1) theorizing that common underlying factors link varied acts of aggression against women; (2) the measures of attitudes and sexual arousal as predictors of aggressive tendencies; and (3) the methodology of assessing aggression within a laboratory context as a basis for testing theories about aggression against women.

An alternative interpretation is that the links between measures related to real-world aggression and the laboratory behavior are the result of some general disinhibitory factors such as nonconformity, more willingness to be outrageous, and/or less concern about being socially desirable. Such individuals may be more willing to report acceptance of violence,

to show sexual arousal to rape depictions, and to behave aggressively in the laboratory. If this interpretation were accurate, it would be expected that the measures related to real-world aggression against women would relate similarly to laboratory aggression against male and female targets. As noted, the present study assessed this possibility. In addition, the number of predictor factors used in the present research was expanded from that used by Malamuth (1983), in keeping with recent research on sexually aggressive males.

## Laboratory and Naturalistic Sexual Aggression

As well, the present research helps link laboratory with nonlaboratory research. Malamuth (1986) assessed the variables thought to set the stage for sexual aggression in natural settings. Three categories were used: Motivation for sexual aggression included sexual arousal to aggression, hostility toward women, and dominance as a motive for sex. Disinhibition to commit sexual aggression included attitudes condoning aggression and antisocial personality characteristics. Opportunity to aggress sexually was assessed by sexual experience. These "predictors" were then correlated with self-reports of sexual aggression in naturalistic settings. Although the predictors related individually to sexual aggression, interactive combinations (i.e., the cross products) of these variables allowed far more accurate prediction of such aggression. These data were successfully replicated by Malamuth and Check (1985) in an independent sample.

The present study used some of these same factors in an attempt to predict laboratory aggression. Sexual arousal to aggression, dominance, attitudes condoning aggression against women, and antisocial personality characteristics were measured for all subjects. In addition, a sex-role stereotyping scale was used.

The two types of aggression measures used in our research program complement each other well, having opposite advantages and disadvantages. The advantage of the laboratory assessment is that it is an "objective" measure that does not rely on subjects' self-reports. However, it assesses aggression in a setting that some argue is artificial and low in ecological validity (e.g., Kaplan, 1983). The measure of naturalistic aggression has the advantage of measuring behavior occurring in nonartificial settings. Its disadvantage is in being a self-report measure. Consequently, considerable confidence in the validity of the relations would be gained if the predictors related to both of these aggression measures. Of course, although some similarity may be expected, conceptually there are also important differences between aggression in the laboratory, which does not contain any overt sexual elements or face-to-face interaction (i.e., administering aversive noise to a person in the next room), and aggression in natural settings, which occurs within a sexual context.

Also, in the laboratory there is intentional creation of some motivation, disinhibition, and opportunity to aggress. This is done by angering subjects in a situation where sanctioning of aggression is implied. Consequently, the interactive model emphasized by Malamuth (1986) to account for naturalistic aggression is far less relevant to the laboratory setting. Nonetheless, some similarity was expected in the relations between the predictors and men's laboratory aggression against women as found between these predictors and naturalistic sexual aggression. As indicated above, similar links were not generally expected with men's laboratory aggression against other males.

## Questions Addressed

In response to the issues discussed here, the following three interrelated questions were addressed with a nonincarcerated sample of men:

- 1. Will individual difference factors (that have been linked with sexual aggression against women) predict laboratory aggression against a female and against a male?
- 2. Will these factors relate in the same manner to laboratory aggression against the female and male targets?
- 3. Are men who are more sexually aggressive against women in naturalistic settings also more aggressive against females and males in laboratory settings?

#### **METHOD**

## Overview of Design

The research was conducted during a 2-year period. All of the measures used in the first year were also employed in the second year, but an additional instrument was added in the second year: the measure of sexual aggression in naturalistic settings. Therefore, data are available on this measure for subjects from the second year only. Where the same measures were used in both years, the data were combined.

The research was conducted in three phases, presented to subjects as totally unrelated experiments. During the first phase, subjects completed various "paper and pencil" measures assessing attitudes, motives, personality characteristics, and for some subjects, sexual aggression. In the second phase, sexual arousal to rape and to consenting depictions was assessed by using physiological and self-report measures. In the third phase, laboratory aggression against male and female targets was measured.

Subjects

One hundred thirty-seven<sup>1</sup> men participated in all three phases of the research. For 88 of these men, data were also available on a self-report scale assessing sexual aggression in naturalistic settings.

Subjects were recruited from various sources: several university courses, a subject sign-up list displayed in front of the psychology department and at a city summer employment center, and newspaper ads.

The initial descriptions of the research indicated that applicants over the age of 18 were needed to participate in various unrelated experiments. They were told that they may sign up for a general subject pool. Experimenters would then select subjects from this list and invite them to participate in specific experiments.<sup>2</sup> Participants were paid \$7 per hour.

When contacted by the different experimenters conducting each of the three phases, potential subjects were given general descriptions of the procedures and measures used. For example, in Phase II they were told that genital measures of sexual arousal would be used. It was emphasized in each phase that subjects could leave at any time and that there would be no penalty nor would any explanation be required. Subjects were paid upon arriving at each study and were told that they could keep the money regardless of whether or not they completed the experiment. As an additional safeguard, an Ombudsman, who was a law professor, was hired for the project. Subjects were given his name and phone number upon signing up for the subject pool. They were told that this person was completely independent of the staff conducting the research and that they could direct any complaints to him. None were made.

At the end of the second and third phases, subjects were debriefed. The debriefing in the second phase included statements emphasizing the horror of rape and presenting several points designed to dispel rape myths. The effectiveness of such debriefings in counteracting some potential negative effects of exposure to sexually violent stimuli has been demonstrated in several studies (Check & Malamuth, 1984; Donnerstein & Berkowitz, 1981; Linz, 1985; Malamuth & Check, 1984).

Although subjects' names were not used for identification, various

<sup>&</sup>lt;sup>1</sup> Slight variations in sample size occur in the analyses reported below due to small numbers of missing data on some measures. As in the research by Malamuth (1983) the participants in this study had volunteered for all of the research phases, including the part using physiological measures to assess sexual arousal. Caution is needed in generalizing from this sample in light of research showing differences between volunteers and nonvolunteers for research using such physiological measures (e.g., Farkas, Sine, & Evans, 1978).

<sup>&</sup>lt;sup>2</sup> There is almost a 50% overlap in the subjects used in Malamuth (1986) and those of the present paper due to this "subject pool" procedure. However, the data reported there were from the first and second phases only and did not include the laboratory aggression, which is the primary focus of the present article.

background information (e.g., date of birth) enabled exact matching of responses across the separate phases of the research. Questionnaire data assessed at the end of the third phase of the research verified that none of the subjects recognized any association between this study and the earlier phases of the research. The purpose of leading subjects to believe that there were independent studies was to reduce the possibility of "demand characteristics" (Orne, 1962) or undue self-consciousness that might reduce honest responding. Similar procedures have been used successfully in other studies (e.g., Malamuth & Check, 1981; Malamuth, 1983). The three research phases of the present research were completed for virtually all subjects within 4 months.

## Phase I: Materials and Procedure

In the first phase, subjects completed a questionnaire administered by a male experimenter. While filling out this measure they were seated at a sufficient distance from each other so that no one could see others' responses. Embedded within other items on this questionnaire were the following measures:

Attitudes facilitating violence. Burt (1978, 1980) theorized that certain attitudes that are widely accepted in Western culture, but are held particularly by rapists and potential rapists, play an important role in contributing to violence against women by acting as "psychological releasers or neutralizers, allowing potential rapists to turn off social prohibitions against injuring or using others" (1978, p. 282). She developed several scales to measure attitudes that directly and indirectly support aggression against women as well as other aggressive acts. As in the research by Malamuth (1983, 1986), the present study used Burt's (1980) Acceptance of Interpersonal Violence (AIV) (6 items) Scale. Although the name of this scale refers to violence in general, five of its six items measure attitudes regarding violence against women; the sixth concerns revenge in general. (However, the fact that this sixth item loaded on this scale suggests some overlap between attitudes pertaining to violence generally and those specifically relating to violence against women.) Examples of items are "A man is never justified in hitting his wife," and "Sometimes the only way a man gets a cold woman turned on is to use force." The internal consistency of this scale, as reflected in the  $\alpha$  coefficient, was .58, which is very similar to that originally reported by Burt (1980).

Sex-role stereotyping. Another attitude scale developed by Burt (1980) was used here. Labeled the Sex-Role Stereotyping (SRS) Scale, it consists of 9 items, which yielded here an  $\alpha$  coefficient of .74. Examples of items are "There is something wrong with a woman who doesn't want to marry and raise a family," and "It looks worse for a woman to be drunk than for a man to be drunk."

Burt (1980) theorized that sex-role stereotyping contributes to rape. In keeping with this view, Check and Malamuth (1983b) found that in comparison to low SRS men, high-SRS men (1) showed sexual arousal patterns that were relatively more similar to those of rapists, (2) perceived to a greater degree that a rape victim reacted positively to the assault, and (3) reported a greater likelihood of raping if they were assured of no negative consequences to themselves. However, as Griffin (1971) has emphasized, acceptance of traditional sex roles by men contains paradoxical or "schizophrenic" elements of chivalrous protection of women while condoning sexual aggression against the "fallen" or "bad" woman, i.e., she who does not behave according to the double-standard rules. Indeed, Burt's SRS scale reflects these mixed attitudes, with some of the content referring to the protection of women from other men, i.e., "a man should fight when the woman he's with is insulted by another man," while other items referring to beliefs that men should be more powerful than women and that women should be "kept in their place," e.g., "A wife should never contradict her husband in public."

More stereotyped sex roles on the part of men have been found to correlate with higher levels of male-against-male laboratory aggression in some studies (see Frodi, Macaulay, & Thorne, 1977, and White, 1983, for reviews). The data regarding stereotyped sex roles and laboratory aggression against women have been less consistent. Some studies show that men higher in sex-role stereotyping aggress against women more than those with less stereotyping (e.g., Taylor & Smith, 1974), whereas others show that higher stereotyping is not associated with more aggression against women, and may under some circumstances be correlated with less aggression (Young, Beier, Beier, & Barton, 1975). Various procedural and assessment differences might explain these discrepancies (Frodi et al., 1977). Research in field settings has also obtained conflicting data regarding the possible link between sex-role stereotyping and violence against women (e.g., Hotaling & Sugarman, 1986).

Dominance. The view has been widely expressed that the desire to dominate women is an important motive for aggression against women (e.g., Brownmiller, 1975; Griffin, 1971; Groth, 1979; Russell, 1984). The present study measured dominance by using a subscale of an instrument developed by Nelson (1979) to assess motivations for sex. This instrument asks respondents to indicate the degree to which various feelings and sensations are important to them as motivations for engaging in sexual acts. Nelson (1979) presents data concerning the reliability and validity of this scale, which yields scores on several functions. The dominance function refers to the degree to which feelings of control over one's partner motivate sexuality (e.g., "I enjoy the feeling of having someone

in my grasp," and "I enjoy the conquest"). This subscale has eight items which yielded an  $\alpha$  coefficient of .80.

Psychoticism. The Psychoticism Scale of the Eysenck Personality Questionnaire (EPQ) was also employed (Eysenck, 1978). As Eysenck makes clear, this scale purports to reflect a variable that stretches through the normal, nonpsychiatric population. Examples of items are "Have you always been a loner?" and "Would you like to think other people are afraid of you?"

There were several reasons for the selection of this particular measure to assess antisocial tendencies. First, theory and research directly point to its relevance to the present focus. Eysenck (1978) hypothesized that this scale is particularly associated with interest in impersonal sex and in sexual aggression. He also reports the findings of an unpublished study that sex offenders are relatively high P scorers (also see Wilson, 1986). As well, on the basis of surveys of sexual attitudes in the general population, Eysenck and Nias (1978) conclude that "High P scorers, tend to show a 'Don Juan' complex, i.e., attitudes of hostility towards their sex partners' (p. 239). Further, recent research (Barnes, Malamuth, & Check, 1984a, 1984b; Linz, 1985) suggests that the P scale may be particularly useful in relating to aggression against women in general population samples.

Second, reviews of the literature (e.g., Claridge, 1983) have concluded that rather than being a measure of psychoticism in the clinical sense, this scale primarily assesses antisocial traits. The content of the scale suggests a particular association with antisocial tendencies toward women and/or "weak" targets. For example, two items concern feelings toward one's mother (e.g., "Do you love your mother?"). As noted earlier, some theorists have stressed the role of such feelings as motivators of male aggression against women (e.g., Cohen et al., 1977). Other items on this scale refer to enjoying hurting people you love, attitudes toward marriage, and reactions to seeing children or animals suffer. Third, as Barnes et al., (1984b) note, the psychological characteristics reportedly associated with rapists are similar to those of high scorers on the *P* scale.

Here, the P scale yielded an  $\alpha$  coefficient of .50. Although Eysenck (1978) had originally reported relatively high  $\alpha$  coefficients, other researchers have recently reported similar relatively low levels of internal consistency as found here (e.g., McCrae & Costa, 1985). Nevertheless, this measure was retained in the current analyses with the recognition that relatively low levels of internal consistency reduce the likelihood of obtaining statistically significant relations with other variables (Cohen & Cohen, 1983).

Naturalistic sexual aggression. The self-report instrument measuring sexual aggression was developed by Koss and Oros (1982). It assesses a continuum including psychological pressure, physical coercion, attempted

rape, and rape. Koss and Oros (1982) and Koss and Gidycz (1985) presented data supporting the reliability and validity of this scale. Examples of items are "I have been in a situation where I used some degree of physical force (twisting her arm, holding her down, etc.) to try to make a woman engage in kissing or petting when she didn't want to," and "I have had sexual intercourse with a woman when she didn't want to because I used some degree of physical force (twisting her arm, holding her down, etc.)."

#### Phase II: Materials and Procedure

Measures of sexual arousal in response to aggression have been shown to yield valuable information regarding tendencies to aggress against women both in rapists (e.g., Abel et al., 1977; Wormith, 1986) and in men from the general population (e.g., Malamuth, 1986; Malamuth, Check, & Briere, 1986). The most accepted measure has been the penile tumescence rape index, a ratio of physiological sexual arousal to rape portrayals compared with arousal to consenting sex depictions (Abel et al., 1977; Earls & Marshall, 1983).

There are limitations in the validity of circumferential tumescence measures (Earls, 1981; Farkas, Evans, & Sine, 1979; Quinsey & Chaplin, 1988). The use of self-reports to examine their correlation with physiological measures is desirable although such reports obviously have their own limitations (e.g., Abel et al., 1977). Self-reports and physiological measures may be assessing differing dimensions of a multidimensional construct (Blader & Marshall, 1984).

Reported arousal was measured on an 11-point scale ranging from 0 (not at all) to 100% (very sexually arousing) in units of 10%. The penile tumescence rape index and a similar reported arousal ratio were highly correlated, r(129) = 0.59, p < .001.

The procedure used here was as follows: The subject was greeted by a male experimenter and given a sheet reiterating the information provided on the phone (e.g., regarding the sexual content of some stimuli). After signing a consent form emphasizing that he was free to leave at any time, the subject was escorted to a private sound-attenuated room. Further instructions were taped.

The subject placed the penile gauge on (a mercury-in-rubber strain gauge). Arousal was monitored on the polygraph in the adjoining room. Following a baseline period, the subject opened a numbered envelope, read the story, and indicated his reported arousal. A resting period was interposed before proceeding to the next story.

Three depictions were read in the following order: The first described a woman masturbating. Its primary purpose was to generate some initial arousal in light of data (Kolarsky & Madlafousek, 1977) suggesting that arousal levels are better differentiated following the elicitation of some

sexual arousal than immediately following the first baseline period. The second and third stories depicted rape and mutually consenting sex, respectively. They were very similar to those used by Abel et al. (1977). Penile tumescence to each depiction was computed on the basis of the maximum positive deflection.

# Phase III: Materials and Procedure

In the third phase (the ESP experiment), about an equal number of subjects were randomly assigned to interact with either a female or male confederate. The procedure was very similar to that of Malamuth (1983), where only a female confederate was used. (Note that the female confederate in the present research differed from that in the 1983 study so as to increase the external validity of the findings. To increase generalizability further it would be desirable in future replications to use several male and female confederates.)

Upon arrival at the laboratory, the subject and confederate were told by the male experimenter that they would participate in an experiment to determine whether feedback affects ESP. They were told that they would be randomly selected to be either the transmitter or the receiver. For 20 trials the transmitter would attempt to "send" numbers to the receiver, who would try to determine the numbers sent. The transmitter could punish the receiver for incorrect responses and reward him or her for correct ones. The punishment was aversive noise, ranging from 1 to 7. Participants were told that the highest levels were very unpleasant and irritating, though in no way dangerous or harmful. For correct responses, the subject could reward the receiver with one of five levels, ranging from 8 to 40¢. Subjects were told that the receiver would be given the rewards allocated.

The experimenter then inputed the names of the subject and confederate into a microcomputer. He stated that the computer would randomly select the transmitter and receiver. It was programmed so that the real subject was always assigned the role of transmitter. The confederate (receiver) and the subject (transmitter) were then escorted into the adjoining room, in which the receiver would sit. The subject was asked to listen to a 5-s sample of noise level 3, so that he would have some knowledge of the intensity of the noise available. Although subjects were told that levels increased in aversiveness, in reality there was only one noise level (70 db (SPL)).

The subject was then escorted to the transmitter's station, while the confederate remained at his or her station. The subject sat in front of the video terminal and responded to a series of demographic questions displayed on the screen. The terminal informed him that numbers would

be displayed on the screen. He was told to concentrate on each for the 7 s they appeared. For an incorrect response by the receiver, the subject could punish him or her by choosing one of the seven noise stimuli. The subject was told that research to date indicated that punishment interferes with the receiver's performance. This statement was made in light of Baron and Eggleston's (1972) research showing the importance of emphasizing the negative impact of punishment. The subject was requested to use his own judgment in determining levels of punishment and reward. Although in keeping with earlier research (e.g., Malamuth, 1983) the major focus here was on aggressive responding, secondary analyses were performed on the reward levels.

The experimenter then entered the receiver's room and proceeded to give him or her the instructions for the ESP task, in a voice audible to the subject in the adjoining room.

Anger inducement. After the subject read the instructions, but prior to beginning to "transmit," he and the confederate were asked to complete an attitude questionnaire, on the pretext that those who see themselves as similar may perform better on ESP tasks. When completed, the questionnaire was removed from the transmitter's room and brought to the confederate. The experimenter then selected a questionnaire, ostensibly completed by the receiver, with responses that generally differed from those of the subject. Both the subject and confederate were then asked to read each other's responses and to write a brief evaluation of the other person that would be exchanged. The evaluation ostensibly prepared by the confederate was quite negative:

It is very difficult to get a clear impression of someone on the basis of so little information. However, it seems to me that this person and myself are quite unalike. I do feel that he seems quite narrow and phony in his attitudes. I strongly doubt that I could become close to this person or would consider socializing with him.

After reading the evaluation, the participants indicated on a scale the likelihood, in their estimation, that they would demonstrate ESP. These ratings were ostensibly to be used to relate attitude similarity and other factors to ESP performance.

Assessment of punishment. At that point, the experimenter asked the confederate to place the headphones over his or her ears. Unbeknownst to the subject, these were later removed. The computer gave the same series of responses to each subject in a manner such that 5 would be correct and 15 incorrect.

Questionnaire and debriefing. After completing the 20 trials, the subject filled out a post-task questionnaire based on that of Baron and Eggleston (1972). It inquired about the extent to which the subject's choices of

punishment levels were motivated by the receiver's performance, a desire to hurt the receiver, to help the experiment, or to help the receiver.

Subjects were also asked a number of questions regarding their perceptions of the purpose of the research and any association it might have to any other study they had participated in. Two raters, "blind" to the subjects' performance, rated these forms and determined that none of the subjects saw any connection between the ESP experiment and the earlier phases of the research.<sup>3</sup> Subjects were fully debriefed about the research.

#### RESULTS

# Check on Aggression Measure

To determine whether the delivery of aversive noise was based on aggressive motivation, correlations were computed between noise levels and subjects' reported motivations. These analyses revealed that noise levels were positively correlated with a desire to hurt the receiver, r(135) = .21, p < .02, and with the receiver's performance r(135) = .29, p < .002, but inversely with a desire to help the receiver r(136) = -.18, p < .04. They were not correlated with a desire to help the experiment. These data provided support for the conceptualization of noise levels as measuring hostile and instrumental aggression (Feshbach, 1970).

The mean level of aversive noise directed against the female confederate was 3.77 (SD = 1.13) and against the male confederate was 3.69 (SD = 1.44). These did not differ significantly.<sup>4</sup> As well, the reported levels of desire to hurt the female (M = 1.76, SD = 1.20) and male (M = 1.67, SD = 1.13) did not differ.

By using the desire to hurt the receiver as part of the operational definition of aggression, the present study and that of Malamuth (1983) incorporated what Berkowitz and Donnerstein (1982) have referred to as the essential feature, i.e., that "the meaning their actions have for them, is that they intentionally are hurting their victims" (p. 253). An

<sup>&</sup>lt;sup>3</sup> A few subjects were rated as expressing varying degrees of suspicion regarding aspects of the Buss paradigm (e.g., whether there were differing degrees of punishment). Analyses of the data excluding these subjects yielded results that in all aspects were at least as significant, and in a few instances showed even stronger relations, as the analyses with all subjects. In reporting the data below, the more conservative procedure of not excluding any subject from the statistical analyses was used.

<sup>&</sup>lt;sup>4</sup> The finding that males did not aggress more against the male than the female appears inconsistent with much of the research on laboratory aggression (Frodi et al., 1977). However, there are several studies showing similar lack of target gender differences (Frodi et al., 1977). Most relevant are studies using the specific type of procedure employed here, i.e., the "ESP" modification of the Buss paradigm. They have not found that males aggress more against other men than against women (e.g., Jaffe, Malamuth, Feingold, & Feshbach, 1974; Check & Malamuth, 1983a).

.001

Variable	Female victim		Male victim	
	β"	sr <sup>2h</sup>	$oldsymbol{eta}$	sr <sup>2</sup>
AIV	.288	.049*	.037	.001
SRS	366	.085**	.183	.025
DOM	.262	.047*	002	.000
PSYCH	.323	.086**	037	.001

.012

-.026

.190

.036

TABLE 1

Multiple Regressions on Aggression Index for Female and Male Victims

Note. AIV = acceptance of interpersonal violence scale; SRS = sex-role stereotyping scale; DOM = dominance sexuality motive; PSYCH = psychoticism scale; TUMRAPE = tumescence arousal to rape index.

.605\*\*\*

.366

.117

TUMRAPE

Multiple R

 $R^2$ 

aggression index was computed here by summing z-score transformations of the aversive noise levels and the reported desire to hurt the receiver.

## Predicting Laboratory Aggression

To assess the overall ability of the predictors to relate to laboratory aggression against the female and male targets, a multiple regression was conducted<sup>5</sup> for each gender target. In order to enable comparisons for the same set of variables, all the predictors were "force entered" into the equations. The results are presented in Table 1. For the female victim, the multiple R was highly significant, accounting for about 37% of the variance.<sup>6</sup> For the male victim, the multiple R was not significant and accounted for less than 4% of the variance. A comparison between these two multiple regressions (Cohen, 1983) was significant, F(5, 120) = 2.57,

<sup>&</sup>quot; Standardized regression coefficient.

<sup>&</sup>lt;sup>b</sup> Squared semi-partial correlation indicating unique contribution of predictor variable to dependent variable.

<sup>\*</sup> p < .05.

<sup>\*\*</sup> p < .01.

<sup>\*\*\*</sup> p < .0001.

<sup>&</sup>lt;sup>5</sup> For consistency with previous research, the tumescence rape index was the sexual arousal measure used in these analyses. However, simple correlations are given for the self-reported arousal measure as well. Analyses were also computed using a combined score of the tumescence and self-report measures following z-transformations of each. The results are very similar when the combined score or either of the individual measures of sexual arousal is used.

<sup>&</sup>lt;sup>6</sup> Stepwise regressions yield very similar results, with all of the variables except sexual arousal entering for the female target (multiple R=.595) and none entering for the male victim.

TABLE 2 Correlations between the Predictors and the Aggression Index" for the Female and Male Victims

	Female victim	Male victim	
Predictor	(n = 60)	(n = 71)	
AIV	.33***	.09	
SRS	02	.18*	
DOM	.41****	.06	
PSYCH	.40****	01	
TUMRAPE	.25**	.03	
REPRAPE	.27**	.10	

Note. AIV = acceptance of interpersonal violence scale; SRS = sex-role stereotyping scale; DOM = dominance sexuality motive; PSYCH = psychoticism scale; TUMRAPE = tumescence arousal to rape index; REPRAPE = reported arousal to rape index.

p < .03, indicating that the predictors did not relate to aggression against the female in the same manner as to the male.

Table 1 also presents the squared semi partial correlations, indicating the unique contributions of each of the predictor variables (Cohen & Cohen, 1983). For the female target, all of the variables except the tumescence index made a significant unique contribution. Although the other variables were positively associated with higher levels of aggression against the woman, sex-role stereotyping was inversely associated with such aggression.

Simple Pearson product-moment correlations are presented in Table 2. These show that for the female victim, all of the predictors except SRS (i.e., AIV, dominance, psychoticism, penile tumescence, and self-reported sexual arousal) were significantly correlated with the aggression index. For the male victim, none reached conventional statistical significance. A comparison between these univariate correlations for the female vs the male targets showed significance for the dominance sexual motive (z = 2.09, p < .04) and the psychoticism (z = 2.37, p < .02) factors.

#### SRS and Reward Levels

Caprara, Passerini, Pastorelli, Renzi, and Zelli (1986) contend that "reward withholding" within the Buss paradigm can be used as an indirect measure of aggression wherein subjects are not as likely to be self-

<sup>&</sup>quot; The aggression index was computed by summing z-score transformations of the aversive noise levels and the reported desire to hurt the receiver.

<sup>\*</sup> p < .12.

<sup>\*\*</sup> p < .05.

<sup>\*\*\*</sup> p < .01.

<sup>\*\*\*\*</sup> p < .005.

conscious about displaying hostile behavior (also see Check, 1984; Check & Malamuth, 1983a). Since the literature discussed earlier has shown conflicting results regarding relations between sex-role stereotyping and aggression against women, it was decided here to not only examine the correlations between SRS and the laboratory aggression index but also the correlations with reward levels (for the five trials where the confederates' responses were correct). The results showed that SRS levels were inversely correlated with the reward levels administered to the female target, r(55) = -.36, p < .01. A similar but nonsignificant relation was found for the male confederate, r(69) = -.18, p = n.s. These correlations do not differ significantly. The finding for the female target is particularly interesting, since the measure of direct aggression had not shown significant relations with SRS. The other predictors were not significantly correlated with reward levels, although there was a trend between AIV and rewards to the female, r(56) = -.21, p < .11.

## Laboratory and Naturalistic Aggression

The correlations between the laboratory aggression index and self-reported naturalistic aggression were significant both for the female, r(39) = .39, p < .02, and male, r(48) = .34, p < .02, targets.

#### DISCUSSION

Regression analyses indicated that the individual difference factors significantly predicted laboratory aggression against the female but not against the male. Further, the multiple regression for the female victim differed significantly from that for the male. Simple correlations showed significant positive correlations between nearly all of the predictors and aggression against the female victim, but none were significant for the male target. The only exception was the sex-role stereotyping measure, which did not correlate significantly with aggression against the female, but it made a significant inverse contribution to the regression equation predicting aggression against the woman. However, an indirect measure of aggression did reveal that higher SRS scores correlated with giving less rewards to the woman.

For over half the sample, data were available on self-reported sexual aggression in naturalistic settings. Such aggression correlated with the laboratory measures of aggression against both the female and male targets. The data suggest links between laboratory and naturally occurring aggression and thereby support the validity of the laboratory paradigm and Koss's self-reported aggression measure. These findings are also consistent with those described earlier that men who are aggressive against women (e.g., rapists) often are relatively likely to commit other aggressive acts as well. Of course, the laboratory aggression paradigm

is not directly analogous to serious aggression in naturalistic settings, although there may be some common underlying factors contributing to both

The findings regarding sex-role stereotyping may be understood within the context of the somewhat paradoxical elements described earlier. Those higher on this variable may have felt particularly resentful toward the rejecting woman who did not "know her place." However, they were not highly aggressive toward her because they may believe that it is inappropriate for a man to overtly aggress against a "weaker" target, i.e., a woman. Yet, they may have expressed their animosity by a more covert and possibly more socially acceptable act—withholding monetary rewards. Such withholding might have also been a socially acceptable means of demonstrating their power over the woman.

The results obtained here considerably extend those of Malamuth (1983). The present data not only replicate the findings that attitudes and sexual arousal to aggression predict laboratory aggression against a female, but demonstrate that similar relations are found with dominance motives and antisocial personality characteristics. These factors have been theoretically and empirically associated with aggression against women in naturalistic settings (e.g., Malamuth, 1986).

The sexual arousal to aggression measure may not have significantly entered into the regression equation once all the other variables had been entered because of shared variance between such arousal and characteristics such as dominance motives and psychoticism. Future research should develop and test models that chart the links among these constructs as well as their relationship to aggression against women. The fact that several variables significantly entered the regression equation suggests the necessity of including both motivational (e.g., dominance motives) and disinhibitory (e.g., attitudes accepting violence) processes in such models.

Most importantly, the fact that the predictors did not relate to laboratory aggression against the male target as they did against the female implicates specific factors as contributors to aggression against women. The results also contradict the hypothesis that the links between "real-world" factors and laboratory aggression found previously (Malamuth, 1983), and here, can be explained solely by nonspecific variables. It is important to reiterate that the predictors used here are connected with dominance

<sup>&</sup>lt;sup>7</sup> However, as suggested earlier, it seems clear that some of the factors contributing to aggression against women may also overlap with factors contributing to other forms of aggression. In fact, it has been found that a measure designed to assess hostility toward women successfully predicted laboratory aggression toward both female and male targets (Check & Malamuth, 1983a; Check, 1984).

and aggression against females rather than with sexual gratification (also see Briere & Malamuth, 1983; Malamuth et al., 1986).

The data provide further support for the nomological network suggested by Malamuth (1983). They support assertions (e.g., Malamuth & Briere, 1986: Russell, 1984) that varied acts of aggression against women, including laboratory aggression and sexual aggression in naturalistic settings, may be related to common underlying factors such as attitudes accepting of violence against women, dominance motives, antisocial personality characteristics, and sexual arousal to aggression. The present data and related findings (e.g., Baron, Strauss & Jaffee, 1988) suggest that aggression against women results from both general factors that contribute to any violence and specific factors that uniquely contribute to violence against women. The development of theoretical models that encompass such general and specific components is needed. Such models should consider the influences of three types of factors: (a) those contributing to any violence, (b) those uniquely causing violence against women, and (c) those promoting aggression against targets perceived as "weaker," less advantaged, etc.

Some variables contributing to aggression against women may also affect sexist expressions not involving physical aggression (Malamuth & Briere, 1986; Russell, 1984). To test this hypothesis, Malamuth (1987) had male subjects participate in an unstructured conversation with a confederate following completion of a "Buss paradigm" similar to that employed in the present study. These conversations were taped and the levels of machismo expressed were scored by "blind" raters, according to criteria such as bragging, criticizing, and derogating the other person. It was found that some of the factors used in the present research (e.g., sexual dominance motives) predicted the machismo levels men displayed toward a female confederate. However, these factors were not predictive of similar expressions directed at the male confederate. It was also found that men's self-reported levels of sexual coerciveness in naturalistic settings correlated significantly with their machismo levels in conversations with the female, but not with the male, confederate. Taken together, those data and the present findings suggest that, at least in part, aggression against women may need to be examined within the larger context of sexist relations. An important task for future research is to identify the factor configurations that lead to nonviolent expressions of such sexism as compared to those that result in actual physical aggression.

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