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Memory, awareness, and automaticity: Cognitive patterns of sexually aggressive and sexually nonaggressive men

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MEMORY, AWARENESS, AND AUTOMATICITY: COGNITIVE PATTERNS OF SEXUALLY AGGRESSIVE AND SEXUALLY NONAGGRESSIVE MEN

by

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APPROVAL PAGE

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The purpose of the current study was to compare cognitive processing styles of sexually aggressive (SA) and sexually nonaggressive (NSA) men. Of particular interest was the way in which these two groups of men processed sexual, aggressive, and sexually coercive information. Additionally, the current study assessed to what degree consciousness or lack of consciousness influenced memory performance of such information.

Based upon the presumption that SA men chronically perceive their world in more sexual and aggressive terms, it was predicted that they, as compared to NSA men, would frequently cognitively process such types of information automatically, i.e., with little effort, control, and awareness. Thus, it was hypothesized that SA men, as opposed to NSA men, would take longer to complete a task in which they were asked to avoid processing such information. A predicted consequence of this hypothesized way of processing was poor memory. Therefore, a second hypothesis tested was SA men, as compared to NSA men, would demonstrate poorer memory performance on a recognition test of sexual, aggressive, and sexually coercive information.

Since no individual differences were found in avoiding processing of the experimental stimuli, the first hypothesis

was not supported by the data. Some between-group differences were found in memory performance. While one set of stimuli elicited responses that supported the second hypothesis that SA men would have poorer memory, the second set of stimuli elicited responses that contradicted the second hypothesis. Due to the mixed results, no strong conclusions were drawn from the data.

Future research was recommended to assess what extraneous factor(s) accounted for the varying memory results. The current study stressed the importance of continuing to explore the role of awareness.

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TABLE OF CONTENTS

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Coercive sexual activity among acquaintances is a pervasive problem on college campuses today. Parrot and Bechhofer (1991) report that "approximately one in four women in the United States will be victims of rape or attempted rape by the time they are in their mid-twenties, and over three quarters of those assaults will occur between people who know each other" (p. ix). It has been well documented that men who self-report engaging in sexually aggressive behaviors adhere to more extreme attitudes and beliefs regarding gender roles, sexuality and interpersonal violence than men who do not self-report engaging in sexually aggressive behaviors. A review of the literature pertaining to men who sexually assault is presented below. Based upon the findings, a rationale for the present study will follow, concluding with a statement of the hypotheses to be tested.

REVIEW OF RAPE

Research reviews (Rapaport & Posey, 1991; Malamuth & Dean, 1991; White & Humphrey, 1991; Craig, 1990) reveal that men who sexually aggress (SA men) are more likely than sexually nonaggressive men (NSA men) to be accepting of (1) rape myths, (2) violence as a method of resolving

interpersonal conflicts, (3) male-female relationships as adversarial, and (4) traditional gender roles. For example, researchers like Rapaport (1984), Malamuth and Check (1983), White, Humphrey, and Farmer (1989), and others have found that SA men more strongly endorse negative attitudes such as those represented in the following statements: "If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her" (from Burt's Rape Myth Acceptance Scale, 1980); "Being roughed up is sexually stimulating to many women" (from Burt's Acceptance of Interpersonal Violence Scale, 1980); "In a dating relationship a woman is largely out to take advantage of a man" (from Burt's Adversarial Sexual Beliefs Scale, 1980); "It's natural for men to get into fights" (from Mosher & Sirkin's Hypermasculinity Inventory, 1984).

Social perceptions of who is to blame in date rape also differ as a function of self-reported sexual aggression. For example, SA men are more likely than NSA men to perceive a woman to be more blameworthy and a man's actions to be more justifiable or excusable in date rape (Yescavage, 1990). Burt and Albin (1981) contend that acceptance of rape myths lead to more restrictive definitions of rape. In fact, Yescavage (1990) found that SA men were less willing than NSA men to label as "rape" depictions of forced sex presented in scenarios. Their perceptions systematically varied as a function of the dynamics of the situation. That is, the later

in the interpersonal interaction the woman's refusal and the longer the couple had been dating, the less likely these men were to label forced sexual intercourse as rape.

Experiments assessing sexual arousal reveal individual differences as well. Rapaport (1984) found that sexually coercive men, as compared to sexually noncoercive men, experienced significantly more sexual arousal to rape scenarios in which the woman had an involuntary orgasm (rape myth portrayal) than when she experienced disgust (realistic portrayal). She found that though both groups of men were aroused by the rape myth portrayal, the sexually coercive men were the more aroused. Rapaport and Posey (1991) as well as others (eg. Donnerstein, 1984; Malamuth and Check, 1983; MacKinnon, 1989) suggest that exposure to pornography, a media form commonly depicting women enjoying rape, is one way in which men may learn to become aroused by such stimuli. A possible outcome of such conditioning is that men may engage in nonconsensual sexual activity with their partner under the assumption that she finds it stimulating (Rapaport & Posey, 1991). Specifically, Malamuth and Check (1983) found that men who self-report some likelihood of raping were also likely to be exposed to more pornography than men who don't self-report any likelihood of raping. One cannot necessarily assume the direction of the relationship between pornography and sexually aggressive tendencies. That is, one cannot conclude that pornography causes one to be more likely to sexually aggress.

It may be that because one has sexually aggressive tendencies, one enjoys pornography and therefore seeks it out more than men who do not have sexually aggressive tendencies.

Typically, individuals are not exposed to pornography nearly as often as they are to mainstream media; therefore, one might suggest that concern over this type of exposure is unfounded. However, Puhala and Murnen (1991) found that exposure to popular media produces similar arousal patterns. Participants who viewed a rape myth portrayal movie ("9 1/2 Weeks") were more sexually aroused by the film and endorsed fewer feminist attitudes afterwards than those who viewed a realistic rape portrayal ("Extremities"). Consequently, exposure to everyday media may in fact be more dangerous than pornography due to its pervasiveness, high frequency of exposure, and early age of onset.

Laboratory studies have found that men who self-report some likelihood to rape act more aggressively than men who do not report any likelihood to rape. Malamuth (1983) demonstrated this relationship by setting up a laboratory task in which male subjects, who were insulted by a female confederate, could "get revenge" by subjecting her to aversive noise. Those who had earlier reported that they were somewhat likely to rape a woman if they knew they could get away with it were significantly more likely to exhibit behavioral aggression via administering aversive noise to the female

target than were the men who did not report any likelihood to rape.

In conclusion, individual differences have been found between men who sexually aggress and men who do not. An overview of the literature suggests a profile of sexual aggressors as those who: hold negative and traditional attitudes regarding male-female interpersonal relations, are sexually aroused by women being raped, make attributions that justify date rape, and are likely to aggress against a woman when provoked by her in a laboratory setting. In summary, research has been devoted to understanding **what they believe** and **what they feel**, but there is a deficiency of research devoted to understanding **how they think**. Research has yet to be devoted to understanding their cognitions in action. An important question is do these two groups of men demonstrate different cognitive processing patterns? Given the individual differences just mentioned, it is likely that SA men process sexually coercive information differently than do NSA men as a result of their past experiences. In the following section, a rationale for hypotheses regarding the automatic processing of specific social stimuli as well as the implications of such a processing style is offered.

RATIONALE FOR PRESENT STUDY

CHRONIC ACCESSIBILITY

One of the fundamental questions in social psychology is whether attitudes affect behavior, and if so, how (Wicker,

1969; Fazio, 1990; Pratkanis & Greenwald, 1989)? Based on the evidence just presented, one could argue that men who sexually aggress have internalized to a greater extent the social norms that condition them to be aroused by sexually violent stimuli. Research on rape has suggested that attitudes are related to behavior. The next question then is, how? **How do attitudes influence an individual?** One purpose of the present study was to address this question by looking at how SA men process particular social information as compared to NSA men.

A second purpose of the present study was to look at the **role of awareness** in cognitive processing styles of sexual, aggressive, and sexually coercive information. Social cognition researchers recently have been re-exploring the role of awareness in social perception and social inference processes with new techniques (Greenwald, 1992; Bargh, 1989). For example, Smith (1989), Lewicki (1985), and Devine (1989) have demonstrated how social judgments are influenced by prior nonconscious experiences. For example, Devine (1989) showed how nonconscious (subliminal) exposure to racially prejudiced materials led participants to make discriminatory social judgments about individuals. Her experiment revealed the "chronic accessibility" of stereotypes regarding African-Americans. Even though participants were unaware of their "attention" to racist information, their behaviors still were influenced by racially prejudiced past experiences which were "primed" or "recruited" by the subliminally presented racist

stimuli. Chronic accessibility, as demonstrated in the aforementioned study, is described as the persistent availability of certain types of information (racist in this case) above and beyond other types of information that may also exist in one's environment.

Smith (1989) demonstrated how after only a few trials of making social judgments of an individual's intelligence, participants were likely to continue making similar judgments in a seemingly unrelated task. He discusses these findings in terms of ease of processing. After repeatedly processing information in a similar way, Smith (1989) contends these processes, becoming more rapid or fluent, form "paths of least resistance" and as a consequence are employed more often.

Might sexually aggressive men have a "long-term perceptual readiness" for sexually coercive stimuli because they have extensive processing experience with such information? Bargh and Pratto (1986) confirm that "... individuals may bring their own idiosyncratic perceptual sensitivities to bear on the selection of stimuli for further processing" (p. 293).

Bargh (1989) and others (Bargh and Pratto, 1986; Lewicki, 1985; Fazio, 1990) suggest that after a while, frequently employed processes become automatic and practically unavoidable. In other words, the more a cognitive process is used, the less it requires conscious direction, attentional resources, and attentional control to be completed (Kahneman;

1973; Schneider & Fisk, 1982). Consequently, these processes are set into motion automatically, no matter what a person's current goals and intentions, regardless of their effort to attend to such information (Bargh, 1989).

In the case of men who engage in sexually aggressive acts, they may have such extensive experience "sizing a woman up" that the processes involved in such inferences are engaged in without conscious effort, attention, or control. Therefore, the present study's first hypothesis is that sexually aggressive men, as compared to sexually nonaggressive men, chronically access sexual, aggressive, and sexually coercive information. In other words, it is hypothesized that SA men, as opposed to NSA men, will automatically process sexual, aggressive, and sexually coercive stimuli.

Automaticity has been tested using a method constructed by Stroop (1935). He showed how processes involved in reading a word (which was the name of a color) interfered with processes involved in naming the color in which the word was printed (eg. the word green printed in red ink). Since we have more practice reading words rather than saying what color they are printed in, the correct response of "red" is slowed down because the meaning of the word "green" interferes since it was automatically processed and therefore brought to mind faster.

Many variations on the Stroop test have been developed and tested. Recently, several variations have been utilized

by clinical psychologists. For example, Williams and Broadbent (1986) used a Stroop-like task to assess individual differences between a sample of suicide attempters and non-attempters using "suicide-relevant" words. Results found emotionally relevant stimuli to significantly slow down suicide attempters' reaction times as compared to non-attempters. Watts, McKenna, Sharrock and Trezise (1986) likewise found spider-related words elicited slower reaction times from spider phobics than individuals who reported no extreme fear of spiders. Foa, Feske, Murdock, Kozak, and McCarthy (1991) analyzed rape survivors suffering from PTSD and found they had slower reaction times to rape related words. Bargh and Pratto (1986), testing a non-clinical population, found individual differences in chronic accessibility of words related to their self-reported personality types. For example, those individuals who were considered self-centered, yielded slower reaction times to "self-centered" types of words. They argue that slower reaction times resulted from their having chronically accessed the words that had idiosyncratic meaning for them.

In the present study this methodology was utilized to test the hypothesis that sexually aggressive men chronically access social information pertaining to sex and aggressiveness. The general hypothesis was that SA men's reaction times to sexual, aggressive and sexually coercive would be significantly slower than NSA men's reaction times.

SEXUAL, AGGRESSIVE, AND SEXUALLY COERCIVE INFORMATION

Sexual and coercive images commonly are intertwined in heterosexual portrayals in American culture. According to some theorists, unweaving the two is not completely possible. For example, MacKinnon (1989) contends that many feminists have been led astray by the question of: is rape sex or is it aggression? The underlying assumption is that the two can be teased apart. MacKinnon argues that this is not possible, and to understand why not, it is important to understand how sexuality is conceptualized in American culture.

Social scientists contend that sexuality is socially constructed (Weeks, 1985; D'Emilio & Freedman, 1988; Millet, 1970). In particular, dominance and submission are sexualized. That is, the male -female hierarchy is eroticized, with women portrayed as sex objects existing solely for men's pleasures. One way to assess what appeals to society sexually is to look at how sex has been marketed and what sells. There exists a seven billion dollar a year enterprise that sells "sex", i.e., pornography (Bondurant, 1991). Considering how financially profitable it is, pornography provides a good gauge of what is considered "sexually desirable".

> It constructs women as things for sexual use and constructs its consumers to desperately want women to desperately want possession and cruelty and dehumanization. ... Anything women have claimed as their own-- motherhood, athletics, traditional men's jobs, lesbianism, feminism-- is made specifically sexy, dangerous, provocative, punished, made men's in pornography (MacKinnon, 1989, p.327).

As a result, sexuality has been interwoven with dominance and control and has been defined from a male perspective. Slang terms in everyday language validate how sexuality has been socially constructed to incorporate coercion. An analysis of words and phrases for sexual intercourse reveals how sex and aggression are intertwined. For example, one of the worst insults a person can yell at another person is "fuck you". Fuck is also a common slang word referring to sexual intercourse. Men who are sexually aggressive are especially likely to use aggressive sexual slang words. Ward (1991) found sexually aggressive men as well as their friends were more likely than sexually nonaggressive men and their friends to use language such as "banging", "drilling", "jamming", "nailing", "reaming", "running a train", "screwing", and "slamming" to refer to sexual intercourse with a woman. To clarify how these have aggressive content, consider the tools and the actions involved in "nailing" for instance. A hammer drives a nail into a piece of wood. The board is the receiver of the force produced by the hammer. Ward (1991) concludes that "cultural language usage associated with sexuality may not only represent constructs, but also serve to form an individual's constructs of sexuality" (p. 46). Thus, in the present study it was predicted that sexually aggressive men would react more to sexually coercive stimuli than sexual and aggressive stimuli.

Three separate groups of experimental stimuli (sexual (S), aggressive (A), and sexually coercive (SC) words), were used to test hypotheses regarding particular processing styles of the sexually aggressive group of men. It was hypothesized that sexually coercive stimuli would produce the slowest reaction times with sexual words producing the next slowest and aggressive words producing somewhat faster reaction times (SC > S > A). This prediction was premised on the assumption that sexually aggressive men have difficulty discriminating between sexual and sexually coercive information.

Anecdotal evidence from rape survivors suggests that rapists construe their activity as sexual in nature. For example, Warshaw (1988) reports a rapist's comments to his sexually assaulted date, "...Can I call you tomorrow? Can I see you next week-end?..." (p. 17). Particularly relevant is Martin and Kerwin's (1991) finding that men were more likely to indicate proclivity to rape when the "likelihood to rape" question was placed in a sexual context rather than in a violent context. This suggests that sexual aggressors may be most likely to act when the context allows them to interpret their behaviors as sexual rather than as violent. Researchers (eg. Koss & Leonard, 1984; Malamuth, 1986; White & Humphrey; 1991) have found consistently that SA men engage in sexual activity much more frequently and become sexually active at an earlier age than do NSA men. Less frequently however, researchers find that sexually aggressive men engage in more

generally deviant and non-sexual but aggressive behaviors (Rapaport & Burkhart, 1984; White, Humphrey, & Farmer, 1989). Therefore, it was reasonable to hypothesize that sexually aggressive men's attitudes, behaviors, and cognitions reflect more automatic processing of sexual and sexually coercive stimuli than nonsexually aggressive stimuli.

A rival hypothesis to the chronic accessibility hypothesis was that aggressive and sexually coercive words would "grab attention" because they are negatively valenced. Pratto and John (1991) recently found that negatively evaluated words produced slower reaction times than positively valenced words using a similar Stroop-like, color-naming task. Using an automatic vigilance theory, they explained how negative valence automatically diverted attention toward the words. "Automatic vigilance functions as a signal, rather than by providing a detailed analysis of the stimulus" (Pratto & John, 1991, p. 389). In essence, a crude judgment is made about the stimuli, "tagging" it as either "good for me" or "bad for me". Hence, a control group of words consisting of negative personality attributes were included in the present study to assess whether negative valence per se resulted in slower reaction times to aggressive and sexually coercive words or whether the actual meaning of them was the cause. If the rival hypothesis was supported, then one would predict no differences in reaction times for aggressive and sexually coercive words between SA men and NSA men. Furthermore, one

would predict enhanced memory for words that grabbed attention as was found by Pratto & John (1991). To confirm that the various word types were evaluated differently, participants evaluated a list of words similar to those presented during the color-naming task, i.e., sexual, aggressive, and sexually coercive. They were asked to make ratings of "positive" ("goodness") and "negative" ("badness") using a Likert-type scale.

CONSCIOUS VS. NONCONSCIOUS RECOLLECTION

Jacoby (in press) and his colleagues (e.g. Jacoby & Kelley, 1990, in press; Toth, Jacoby & Lindsay, in press), endorsing a process-oriented view of memory, refer to two functions of memory. First, one can use memory as a tool to facilitate current processing without any conscious awareness or subjective feeling of "remembering" accompanying its use. This can result in a misattribution of why one interpreted environmental stimuli the way one did. Second, memory can be used as an object of attention itself. One can consciously use memory to recollect (i.e., memory as an object of attention) as well as to nonconsciously use it in the perception process (i.e., memory as a tool).

Jacoby and Kelley (1990) point out that the subjective experience of remembering is not identical to use of a corresponding memory trace. While one is an action, the other is an attribution. Jacoby and his colleagues (Jacoby & Kelley, in press; Toth, Jacoby & Lindsay, in press) regard

subjective experience as a construction based on inferences. Therefore, a subjective experience of remembering is one possible outcome of an attributional process that explains **ease of processing** due to prior experience facilitating similar perceptions. However, individuals often misattribute this feeling of perceptual fluency to qualities of the present context rather than to memory usage like recall or recognition (eg. mere exposure effect). Consequently, one possible implication for the present study is that SA men may misattribute ease of processing to a current interaction and make incorrect assumptions about their present company's sexual interest, sex-willingness, or candidacy for sexual assault. In other words, if a woman is perceived to be sexually interested, then she may be someone to ask out. However, if she is considered to be a "tease", then she may be perceived as someone who deserves to be punished with the "fitting" punishment, i.e., sexual assault.

If sexually aggressive men have repeated experiences in which they perceive coercive information sexually, and vice versa, these cognitive processing patterns may become automatic; consequently, they may be less aware that such chronic processing has an impact on their current perceptions. Therefore, another hypothesis was that SA men who, as hypothesized, chronically access sexual, aggressive, and sexually coercive information would have poorer conscious monitoring of previously presented sexual, aggressive, and

sexually coercive information than their NSA male counterparts. That is, SA men would make more recognition errors than NSA men due to nonconscious influences of their frequent, past processing experiences of such information.

In the present study a follow up recognition memory test was administered to test this hypothesis. A modified version of Jacoby's process dissociation procedure was utilized to explore differences in SA men's and NSA men's conscious recollective efforts as opposed to nonconscious intrusions on performance. Research participants were asked to distinguish or recognize three different sets of words. One set, the "new" words, they had not yet seen. The remaining two sets, "old" words to which they had already been exposed, were the "colored" words, and the "evaluated" words.

According to theories of attention and automaticity, if SA men automatically process sexual, aggressive, and sexually coercive words, they should have a difficult time consciously differen-tiating among the "old" sets of words. It was proposed that in the case of the "old" words, those processed automatically in the color-naming task were likely to later feel familiar without consciously being recognized. Therefore, those words would be likely to be confused with the words they just evaluated because they should all feel familiar. Hence, "source" errors were hypothesized due to this confusion. That is, color-named sexual, aggressive, and

sexually coercive words were hypothesized to falsely be recognized as having been words they evaluated.

The opposite may occur as well; that is, SA men may recognize evaluated words as those from the color-naming task. It was proposed that a more general confusion could result also, looking like random guessing among the old and the new sexual, aggressive, and sexually coercive words. In fact, West (1988) found exactly these types of "false inclusion" errors (false alarms) with a clinical population of paranoid personality disordered subjects. In a recognition task, after color-naming "threat" words, paranoids showed a general confusion between old and new threat words. That is, his subjects were worse at recognizing threat words than non-threat words from the color-naming task, more so than "normal" subjects. However, he did not allow for any discrimination between conscious and nonconscious influences on memory performance.

The present study attempted to differentiate between these two distinct processes by employing Jacoby's "oppositional logic". According to this logic, Jacoby (in press) contends that nonconscious (familiarity) and conscious processes (subjective experience of remembering--recognition) can work either in unison or in opposition to one another. Hence, when both familiarity and conscious experience of remembering work in unison, accurate recognition should occur. On the other hand, when conscious processing fails to

accompany nonconscious processing, source errors and false inclusion errors (false alarms), as predicted in the present study, should occur. This oppositional logic is the foundation for Jacoby's process dissociation procedure which, as was used in this study, allows one to be more certain that source errors and false inclusion errors (false alarms) are a result of purely nonconscious influences. That is, because the present study's recognition test instructions are set up to place conscious recollection and familiarity feelings in opposition, one can surmize that any errors are evidence of nonconscious influences on memory performance.

STATEMENT OF HYPOTHESES

In summary, the purpose of the present study was to explore an aspect of sexually aggressive men that had not yet been researched, namely, their cognitive processing of sexual, aggressive, and sexually coercive information. Two hypotheses were proposed: (1) sexually aggressive men chronically access sexual, especially sexually coercive, stimuli and therefore yield slower reaction times on a Stroop-like task which assesses automaticity of processing, and as a consequence, (2) they perform poorly on a memory task because their lack of attentional effort toward such automatically processed words limits their conscious ability to distinguish among different words: those they saw, those they evaluated, and those they may only think they saw.

The findings have implications for sexually aggressive men's social perception and social inference processes. Therefore, this study attempted to demonstrate how some men have internalized culture to such an extent that it "distorts" their reality in a way that they are continually assessing women and situations along dimensions of sexuality that is of a coercive nature.

CHAPTER II

METHOD

PARTICIPANTS

Of a pool of 350 men who participated in a mass screening opportunity available to all introductory psychology students, those who offered to participate in further research and who met criteria were called in to participate. The criterion for selection was based on scores from an adapted version of the Sexual Experiences Survey. Twenty men who self-reported having had consensual sex only constituted the sexually nonaggressive group (NSA), and twenty men who self-reported having engaged in some type of sexually aggressive behavior (other than having used flattery and/or deception) constituted the sexually aggressive group (SA). Men who self-reported never having engaged in sexual intercourse with a female were not considered for selection into either category. The majority of participants were first year students under the age of 20 and Caucasian. By showing up, participants automatically received experimental credit for partial fulfillment of requirements for their general psychology course.

MATERIALS

Sexual Experiences Survey. Participants completed an adapted version of Koss and Oros' (1982) seven-item behavioral

questionnaire (see Appendix A) which served to categorize men as either sexually aggressive or sexually nonaggressive. An example of an item was, "Have you engaged in any of the following with a woman when you knew she didn't want to by threatening to or using some degree of physical force (twisting her arm, holding her down, etc.)?" a. sex play b. attempted sexual intercourse c. sexual intercourse d. other sex acts (oral sex, anal sex,...). Koss and Gidycz (1985) have found significant correlations between men's level of aggression as described on self-report and as given in the presence of an interviewer ($r=.61$, $p<.001$). Koss and Gidycz (1985) also reported test-retest agreement for 93% of the men surveyed.

Color-Naming Stimuli. Three word types were constructed and used to test hypotheses. The categories were: "sexual", "aggressive", and "sexually coercive". Two separate lists were constructed for each of these categories (see Appendix B) so that response times would be more generalizable and not a result of any particular word(s). Each category consisted of 8 words that were randomly repeated ten times on an 8" x 8" laminated card. Six colors were randomly used to fill in all eighty words per card. The colors were: green, yellow, purple, red, blue, and brown. No word nor color was repeated consecutively on any card.

A fourth set of stimuli that consisted of negatively valenced words were constructed to control for the possibility

that negative affect automatically attracts attention (eg. Pratto & John, 1991) thereby yielding slower reaction times to the experimental words and not the specific meaning of them.

Additionally, the original Stroop stimuli were used to provide a baseline for each individual's ability to do the color-naming task. The six colors which were selected were also the 6 words that made up the words for the Stroop card. The words were repeated ten times just like the other cards with no word nor color consecutively repeated. Furthermore, no word was printed in its corresponding ink color; that is, all words conflicted with the color in which they were printed.

Words for each category were chosen and matched as closely as possible for length of the word as well as frequency of the word (Frances & Kucera, 1982). For both lists of S, A, SC word types, category means were a length of 6-7 letters and differed from other categories by less than 2 letters. Frequency averages were comparable as well. For one list, category word means differed by less than 5 frequency points, and for the other list, category word means differed by less than 15 frequency points (see Appendix C).

Manipulation checks assessed how appropriately each word fits its designated category. Thirty undergraduates used a Likert-type scale ranging from 1 (high) to 5 (low) to rate how representative each word was of its corresponding category. Sexual words for both lists on average were rated 1.54.

Aggressive words for both lists on average were rated 1.64. Sexually coercive words for both lists on average were rated 1.97.

PROCEDURE

Participants were told that the purpose of the study was to see how emotionally-laden material affected their ability to perform a task of color-naming. They were informed that the study in which they were about to participate would expose them to some explicit materials. They were informed at that time that their participation was strictly voluntary and that they would receive credit regardless of whether they chose to start or complete the experiment. Then they proceeded to fill out the standard University of North Carolina at Greensboro Informed Consent form (see Appendix D) along with their participation credit form. No participants refused to take part in the study nor did any terminate the study before completion. Next, participants were quickly checked for color-blindness by familiarizing themselves with the ink colors in which the words were printed. All participants were able to distinguish the colors.

Participants, being tested individually by three male experimenters, were instructed to ignore the meaning of the words in which they were to be exposed and to simply state the color in which each word was printed. Using a stop watch, the experimenters gathered an overall reaction time for each category card from the moment participants said the first

word's color to the moment they said the last word's color. The Stroop card was presented before and after the experimental words. The two reaction times were then averaged to create a baseline. The other categories were randomly ordered so that practice effects were minimized for any one category. The experimental reaction times were subtracted from the average Stroop reaction time and used as a difference score.

After all five cards were timed, participants then evaluated a list of words as quickly as possible. The other word list to which they were not exposed during the color-naming task was the word list in which they made "good"/"bad" evaluations. Participants were told that the task was to see how rapidly one can make snap decisions about the goodness or badness of emotionally-laden materials.

Lastly, a recognition memory test was administered. Participants were asked to do three things on one sheet of paper which listed 20 sexual words, 20 aggressive words, 20 sexually coercive words, and 20 emotional words. Each category of words consisted of 8 color-named words they saw, 8 evaluated words they rated, and 4 "new" words they were not exposed to previously. The entire list of 80 words was alphabetized as a form of randomization. They were asked to: (1) circle all the words they remembered evaluating, (2) cross out all the words they did not remember from either the color-naming task or the evaluation task, and (3) leave unmarked all

the words they remembered seeing from the color-naming task.

Participants were informed that any word they remembered seeing during the color-naming task was not a word that they evaluated and they should therefore leave it unmarked. After making their memory judgment, they were asked to rate how certain they were of their response. Participants used a Likert-type rating scale where 1=absolutely sure and 6=absolutely unsure.

Finally, participants were debriefed (see Appendix D). They were informed that the purpose of the study was to look at how emotionally-laden materials, sexual and aggressive words in particular, affect (1) one's ability to keep on task (that is name the color without reading the word), and (2) one's memory for such words. Participants were thanked for their time and cooperation and were asked not to discuss the study with anyone.

ANALYSES

A repeated measures analysis of variance design was used to test for significant differences between SA men's and NSA men's reaction times to sexual, aggressive, sexually coercive, and negative stimuli. Sexual aggressiveness, a between-subjects variable, and type of stimuli, a within-subject variable, were the two "independent" variables under manipulation in this quasi-experimental study. An additional independent variable was list type. Two similar lists were constructed to make the results more generalizable. Overall

reaction times to each type of stimuli were the dependent variables measured. Average reaction times to the Stroop stimuli were used as a baseline to provide a more powerful statistical test by lessening the random "noise" due to individual variability. A difference score was constructed by subtracting reaction times to each word time from the average Stroop reaction time.

A repeated measures analysis of variance design was used to test for significant differences between SA men's and NSA men's evaluations of sexual, aggressive, sexually coercive, and negative word types of words. Evaluation rating was the dependent variable measured and the "independent" variables were the same as stated above.

A repeated measures analysis of variance design was used to test for significant differences between SA men's and NSA men's recognition memory errors for sexual, aggressive, sexually coercive, and negative types of words. Three recognition error rates (false inclusions--new words mistaken as old, false exclusions--old words mistaken as new, and source errors--color-named words mistaken as evaluated or vice versa) were the dependent variables measured and the "independent" variables were the same as stated above.

A repeated measures analysis of variance design was used to test for significant differences between SA men's and NSA men's certainty ratings of their recognition memory performance for sexual, aggressive, sexually coercive, and

negative types of words. Certainty rating of the correctly recognized words and the three recognition errors (false inclusion errors, false exclusion errors, source errors) was the dependent variable measured and the "independent" variables were the same as stated above.

CHAPTER III

RESULTS

The present study included three tasks: (1) color-naming, (2) evaluation, and (3) recognition. The following results are presented in this same order.[1] Repeated measure analyses of variance (ANOVAs) were created from a 2 X 2 X 4 factorial design with two between subjects factors (GROUP type and LIST type) and one within subjects factor (WORD type). An additional within subjects factor, ERROR type, was used for the recognition data. Further analyses were performed on the recognition data due to the complexity of the results. These included individual analyses at each level of the within subjects factors. A Bonferroni multiple means comparisons procedure with a t-statistic was used to examine significant findings from the ANOVAs (McClave & Dietrich, 1988). Significance levels were based on the standard, alpha=.05, unless otherwise stated.

COLOR-NAMING REACTION TIMES

To determine a baseline value for each participant's ability to do the color-naming task, the standard Stroop color words were given twice and reaction times to them were

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[1] The three tasks were not randomly ordered. The order was always color-naming, evaluation, and recognition.

averaged.[2] They were administered once immediately before the experimental words and once immediately afterwards. A difference score (dRT), created by subtracting a subject's WORD type reaction time from their average Stroop reaction time, was computed (i.e., average Stroop-SEX, average Stroop-AGG, average Stroop-SC, average Stroop-NEG).

It is important to note that mean reaction times were always the slowest for the Stroop words. Therefore, dRTs were interpreted in the following way: the closer the dRT was to 0, the greater the interference in processing the color of the experimental words. Hence, high dRTs reflected less difficulty rather than more difficulty in processing.

This measure was subjected to a 2 X 2 X 4 repeated measures ANOVA, with LIST type (A and B) and GROUP type, i.e., type of past sexually aggressive history (SA and NSA) as the between subjects factors, and WORD type (SEX, AGG, SC, NEG) as the within subjects factor. The ANOVA yielded an overall significant WORD effect, $F(3, 102)=9.16$, $p<.0001$ (Table 1), as well as a WORD X LIST interaction, $F(3, 102)=3.40$, $p<.03$ (Table 2). There was no overall effect for list type or group. Multiple t-tests using the Bonferonni correction method examined which means accounted for the interaction between WORD and LIST.

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[2] An average of the two helped to account for any practice effects which may have occurred.

As can be seen in Table 1, list A elicited reaction times that varied across word types whereas list B failed to elicit any significant variability. Significant differences between word type dRTs for list A were as follows: (1) SEX and SC, (2) SC and AGG, and (3) AGG and NEG. Although dRTs for AGG and SEX words did not differ significantly, the means were in the predicted direction. Hence, the data failed to reject the within-subjects hypothesis that sexually coercive words would elicit the slowest reaction times with sexual and then aggressive words following with somewhat faster reaction times.

EVALUATIONS

A 2 X 2 X 4 repeated measures ANOVA assessed the degree to which participants evaluated SEX, SC, AGG, and NEG words as positive or negative on a five-point continuum (1=very negative).[3] An overall WORD effect was found, $F(3, 99)=136.11$, $p<.0001$ (Table 3), as well as a WORD X LIST interaction, $F(3, 99)=6.19$, $p<.003$ (Table 4). Again there were no overall LIST type differences or GROUP type differences.

An examination of the means revealed that for only one word type there existed an overall LIST difference; list A and list B were statistically different for NEG words, with list A NEG words eliciting more negative ratings. Analyses

[3] Men who color-named list A evaluated list B and men who color-named list B evaluated list A.

revealed that both list type evaluations were significantly different for the following WORD means comparisons: (1) SEX and SC, (2) SC and NEG, and (3) SEX and NEG. Means comparisons revealed that interaction effects were due to significantly different evaluations for list B between SC and AGG and for list A between AGG and NEG. The words were evaluated from positive to negative in the following order: SEX, SC, AGG, NEG, with SEX words slightly positively valenced and SC words slightly negatively valenced.

RECOGNITION

Unlike tasks one and two, GROUP differences were found for the third task of recognition. Results from the mean number correctly recognized are discussed first. Afterwards, the recognition error types are discussed. Correct recognition referred to identifying two things: (1) whether or not a word was "old" or "new", and (2) if "old", what was its source (i.e., "color-named" or "evaluated"). Hence, correct recognition included accurately identifying new items as well as old items.

A significant WORD effect, $F(3,99)=11.53$, $p<.0001$ (Table 6), was revealed. Means comparisons revealed that aggressive words were the least likely type to be correctly recognized.

Various types of recognition errors were analyzed to distinguish between nonconscious and conscious influences on memory performance. Errors were divided into three types called source errors, false inclusion errors, and false

exclusion errors. Two types of mistakes were added together to make up the source errors, which reflected feelings of familiarity without conscious intervention. They were: (1) color-named words recognized as evaluated words, and (2) evaluated words recognized as color-named words. False exclusion errors, which reflected a deficit in familiarity feelings as well as consciousness, consisted also of two types of mistakes: (1) color-named words reported as new, and (2) evaluated words reported as new. Finally false inclusion errors, which were the result of feelings of familiarity not due to the experiment and without consciousness, consisted of two other types of mistakes: (1) new words believed to be color-named words, and (2) new words believed to be evaluated words.

An initial 2 X 2 X 4 X 3 repeated measures ANOVA was performed, with type of past sexually aggressive history (GROUP type) and LIST type as the between subjects factors, and WORD type and recognition ERROR type as the within subjects factors. The mean number of errors for the twelve conditions was the dependent variable. A robust within-subjects effect for WORD type, $F(3,99)=10.58$, $p<.0001$, was revealed as well as two interactions. There was a robust ERROR X WORD effect, $F(6,190)=20.62$, $p<.0001$. Further analyses were performed by individually analyzing the three error types. Additionally, the four word types were also individually analyzed. The results of the word type analyses

are discussed at the end of this section. The following results were obtained from performing three separate ANOVAs, one for the source recognition errors, one for the false inclusion errors, and one for the false exclusion errors. All three ANOVAs were analyzed similarly, with GROUP type and LIST type as the two between subjects variables, and WORD type as the within subjects variable. The 2 X 2 X 4 repeated measures ANOVA for **source errors** found a GROUP X LIST interaction, $F(1,33)=4.19$, $p<.05$ (Table 7). Post-hoc means comparisons revealed that SA men responded differentially to list type, whereas NSA men did not. For list A, SA men made more source errors than NSA men. Whereas, for list B, the opposite occurred; NSA men made more source errors than SA men. Second, a robust WORD effect was found, $F(3,99)=7.51$, $p<.0002$ (Table 8). Means comparisons showed that NEG words elicited the fewest source errors overall.

False inclusion errors (false alarms) revealed similar results. A GROUP X LIST interaction, $F(1,33)=4.14$, $p<.05$ (Table 9), was found. Means comparisons revealed that SA men responded differentially to list type, whereas NSA men did not. For list A, SA men made more false inclusion errors than NSA men. Whereas, for list B, the opposite occurred; NSA men made more false inclusion errors than SA men. Additionally, a robust WORD effect, $F(3,99)=22.69$, $p<.0001$ (Table 10), was found. Means comparisons revealed that NEG words were least likely to be falsely included.

Finally, an examination of **false exclusion errors** (misses) found only one significant effect for WORD type, $F(3,99)=24.38$, $p<.0001$ (Table 11). Means comparisons found SEX and NEG word types to differ significantly from one another, with old SEX words being the least likely to be called new and old NEG words the most likely to be called new.

CERTAINTY RATINGS

A 2 X 2 X 4 repeated measures ANOVA with two between subjects factors (GROUP type and LIST type) and one within subjects factor (WORD type) revealed a significant WORD effect, $F(3,96)=3.23$, $p<.04$ (Table 12), and a WORD X LIST interaction for certainty ratings of the **correctly** recognized words, $F(3,96)=4.12$, $p<.02$ (Table 13).[4] Post-hoc comparisons revealed that the interaction was due to list B SEX and NEG words evoking more certain responses than the other word types in either list.

A 2 X 2 X 4 X 3 repeated measures ANOVA with two between subjects factors (GROUP type and LIST type) and two within subjects factors (WORD type and recognition ERROR type) revealed that certainty ratings for the total amount of words **incorrectly** recognized differed significantly as a function of error type, $F(2,64)=18.64$, $p<.0001$ (Table 14), with **source errors** eliciting the most "falsely certain" ratings.

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[4] Correct recognition included accurately identifying new items as well as old items.

Certainty ratings were individually assessed by ERROR types just as the recognition data were. Hence, a 2 X 2 X 4 repeated measures ANOVA of the certainty ratings for the **source errors** yielded a significant WORD effect, $F(3,81)=3.02$, $p<.05$ (Table 15). Means comparisons revealed that AGG words elicited the least certain ratings.

A 2 X 2 X 4 repeated measures ANOVA of certainty ratings of **falsely inclusion errors** (false alarms) was performed. Certainty ratings of new words that were mistakenly recognized as old did not differ as a function of GROUP type, LIST type, WORD type, or ERROR type. A 2 X 2 X 4 repeated measures ANOVA assessing certainty ratings for **false exclusion errors** (misses) also revealed no significant differences.

CHAPTER IV

CONCLUSIONS

The purpose of the present study was to compare the cognitive processing styles of sexually aggressive and sexually nonaggressive men. Of particular interest was the way in which these two groups of men processed sexual, aggressive, and sexually coercive information. Additionally, the present study assessed to what degree consciousness or lack of consciousness influenced memory performance of such information.

Based upon the presumption that SA men chronically perceive their world in more sexual and aggressive terms, it was predicted that they, as compared to NSA men, would cognitively process such types of information automatically, i.e., with little effort, control, and awareness. Thus, it was hypothesized that SA men, as opposed to NSA men, would take longer to complete a task in which they were asked to avoid processing such information. A predicted consequence of this hypothesized way of processing was poor memory. Therefore, a second hypothesis tested was SA men, as compared to NSA men, would demonstrate poorer memory performance on a recognition test of sexual, aggressive, and sexually coercive information.

CHRONIC ACCESSIBILITY

As predicted, sexually coercive words caused the most interference in the color-naming task for all participants, while sexual and aggressive words were significantly less problematic. However, the present study failed to find any evidence of between group differences in processing time of the various word types. Therefore, the hypothesis that sexually aggressive men chronically access and hence automatically process sexual, aggressive, and sexually coercive types of information was not supported, while the hypothesis that the three types of information would be processed differentially was supported. Four possible explanations are discussed below to account for the lack of support for the between group differences.

One reason why the color-naming task failed to detect individual differences may have been due to the variability in the data. What factors might account for this variability? First, in the present study three different experimenters collected the data which may have added some noise or error. Second, the method of data collection may have been somewhat insensitive, i.e., experimenters used a stop watch to record reaction times which varied anywhere from just under one minute to slightly over two minutes. Third, and possibly most problematic, the self-report tool used to differentiate the two groups may not have adequately placed participants into the two groups according to their actual experiences,

especially given the hypothesis that SA men may have poor memory for their assaultive experiences. For example, if a significant percentage of SA men fail to report sexually coercive experiences and hence are placed in with the NSA men, then one would be hard pressed to distinguish between the two groups using any type of test and methodology.

In spite of these factors, it must be noted that the present study's methodology has been used previously to show differences in processing times with many populations ranging from "disturbed" groups, for example, suicide attempters (Williams & Broadbent, 1986) to less extreme and/or "normal" groups, for example, spider phobics (Watts, et. al, 1986) and introverted/extroverted personalities (Bargh & Pratto, 1986). Additionally, while the self-report measure may not be the most valid tool, it is currently the best option available and has previously been successful at significantly identifying two distinct groups of men. Hence, it was not unreasonable to have expected this methodology to have detected individual differences between a sample of self-reported sexually aggressive men and a sample of sexually active but sexually nonaggressive men.

A second explanation assessed the appropriateness of an individual differences approach. Perhaps no differences in cognitive processing were revealed because in fact, the participants in the study represented a homogenous population. That is, as has been suggested by Brownmiller (1975) and

Burkhart (1984), the most distinguishing characteristic of men who sexually aggress is that they appear to be "normal". Consequently, an individual differences hypothesis might be expected to yield null results. However, there is evidence to suggest that men who sexually aggress have some distinctive features. When SA men and NSA men have been allowed to express themselves in their own words, individual differences have been uncovered where paper and pencil methods have failed (Burt, 1980; Yescavage, 1990; Bondurant, 1992). Additionally, recent evidence from a longitudinal study suggests that young men who report a sexually aggressive past history in high school, as compared to young men who do not report any past sexually aggressive history, are four times more likely to be sexually assaultive in their first year of college (White & Humphrey, 1992). Therefore, some factors must exist that distinguish between men who sexually aggress and men who do not.

A third explanation for no significant individual differences on the color-naming task critiques the diagnostic inability of the test. Two different problems are explored. First, the experimental words may have been too far removed from any meaningful context to elicit differences in processing; hence, the words in and of themselves may not have been particularly salient to either group. A second possibility was that these two groups of men do not process sexual, aggressive, and sexually coercive information

differently at **input**. However, this does not mean that their cognitive processing styles do not differ altogether. It may only mean that at this stage of information processing no differences exist. Analysis of the recognition data provide mixed, partial support that suggest some differences might exist later on at **output**.

Finally, a fourth possible explanation, similar to the third in its consequences, is that both groups of men were slowed down by the experimental words, but for different reasons. SA men as predicted, may have had slowed reaction times because of chronic accessibility, while NSA men may have had slowed reaction times because of the nature of the materials. The explicitness of the materials may have "grabbed attention" and hence kept the NSA men from avoiding processing the meanings of the words. If this were the case, differences in memory performance would have occurred while color-naming reaction times remained undifferentiated. While the SA men would have had poorer memory because they automatically processed the words, the NSA men would have had better memory because they more deliberately or consciously processed the words. Though the main hypothesis regarding the color-naming task was not supported by the data, the data failed to support the alternative hypothesis as well. That is, negatively valenced information did not significantly take longer to process than positively valenced information. Examination of participants' evaluations in addition to the

color-naming reaction times demonstrated the lack of support for this hypothesis. There were no significant differences between color-naming reaction times of sexual and negative words, whereas evaluations between the two word types did differ significantly. Sexual words were rated significantly more positively than the negative words. Hence, a general interpretation of the data is that more extremely valenced words, both negative and positive, were what Pratto & John (1991) deemed "automatically vigilant". Sexual information may have grabbed attention automatically for the same reason Pratto & John (1991) proposed for the negatively valenced information, namely that it is adaptive to respond automatically to potentially harmful/negative information. According to this logic, it may be just as adaptive to be predisposed to process sexual information as well as negatively valenced information.

CONSCIOUS VS. NONCONSCIOUS RECOLLECTION

It was argued that assuming SA men frequently engage in processing sexual, aggressive, and sexually coercive types of information, they would have difficulty remembering exactly which words they saw from the earlier tasks and which words they only thought they saw. Furthermore, it was predicted that they would have difficulty with recollecting the source of the words they correctly remembered having seen.

The tentative explanation that between group differences in cognitive processing occurred at output only and not at

input is based on speculation of mixed results. First, while responses to list A stimuli provided marginal support that SA men had poorer memory overall than NSA men, the other set provided no support. Second, responses to list A stimuli additionally provided support that (1) SA men's memory was poorer than NSA men's memory for source and (2) SA men's memory was poorer than NSA men's memory for detecting words they really saw from words they only thought they saw (false inclusion errors). On the other hand, responses to list B stimuli did not. In fact, list B responses revealed the opposite results. Therefore, no strong conclusions can be supported by the data from the current study.

LIST EFFECTS

Although there were no overall list differences, list type interacted with either word type or group type in the current study's three tasks. In an effort to explain these unexpected but pervasive findings, a couple of possible causes were assessed. Even though frequency of usage of the words and average length of the words chosen for both lists were controlled for, an analysis of variance was performed on the recognition data to see if these factors weren't sufficiently controlled. As expected, neither frequency nor length predicted the undesired differences.

The most confusing aspect is that list effects always interacted with either word type or group type. List A was typically a more sensitive list for an unknown reason to be

explored in future research. That is, list B produced either no significant differences or antithetical results from those predicted. There is no theoretical reason to explain why half of the participants would react to list type while the other half would not. One might suggest that these perplexing findings stress the importance of being sensitive to cues in the environment. While one set of cues elicited the expected response from participants, another seemingly similar set elicited different responses altogether.

GENERAL CONCLUSIONS

The main conclusion that can be drawn from these findings is that there is an extraneous variable unaccounted for in the stimuli that complicated the results. Although the current study's findings provided no solid evidence to suggest that SA men differ from NSA men as a function of their cognitive processing styles, there is insufficient evidence to drop this line of inquiry altogether. By diagnosing and then controlling for the extraneous variable(s), one will be in a better position to determine whether or not SA and NSA men can be distinguished by their ability to consciously and nonconsciously remember sexually coercive information.

More generally, future research should continue assessing the role of awareness and intentionality, because these factors are sure to play an integral part in explaining sexually coercive behaviors. Many rape prevention programs are based on the premise that miscommunication is a leading

cause of rape; consequently, women are told they need to say "no" better. This assumes a lack of awareness and intentionality on the part of the perpetrator regarding his coercive actions, as if he didn't mean to force her.

Empirical studies are necessary to replace implicit assumptions about awareness with actual data. One purpose of the current study was to begin to address this important question. While the hypotheses were not supported, the study provided a starting point from which to make revisions and hopefully, in the future, more effectively assess awareness in sexual aggressors.

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APPENDIX A

SEXUAL EXPERIENCES SURVEY

Males engage in a variety of sexual behaviors with females. Some engage in certain behaviors more than others. We would like to know how often you have experienced each of the sexual behaviors under each circumstance listed. Some of you may have had several of these experiences. Read each behavior and circumstance carefully and then rate the number of times that you have had the listed experience since age 14. Please answer regardless of the kind of relationship you had with the female (i,e,, stranger, just met, casual acquaintance, date, fiance, girlfriend, younger, older, same age, etc.).

A= never (0 times)
B= one time
C= two times
D= 3-5 times
E= more than 5 times

How often have any of the following occurred when you both wanted to (i.e., she consented or offered no resistance)?

1. sex play (fondling or kissing or petting, but not intercourse)
2. attempted sexual intercourse but for whatever reason intercourse did not occur?
3. sexual intercourse (inserted penis, ejaculation not necessary)
4. other sexual acts, such as oral or anal intercourse or penetration with an object other than the penis

How often have you said flattering things that you really did not mean such as, you love her, she's special, you will continue the relationship, etc.) to make her do any of the following when she did not want to?

5. sex play
6. attempted sexual intercourse
7. sexual intercourse
8. other sexual acts

How often have you used verbal pressure or arguments to make her do any of the following when she did not want to?

9. sex play
10. attempted sexual intercourse
11. sexual intercourse
12. other sexual acts

How often have you used your position of authority or status (such as boss, supervisor, camp counselor) to control her (by denying a promotion, firing her, giving a bad report, or otherwise affecting her future or reputation, etc.) to make her do any of the following when she did not want to?

13. sex play
14. attempted sexual intercourse
15. sexual intercourse
16. other sexual acts

How often have you <u>said</u> you would use physical force (such as grabbing, hitting, choking, pinching, or in any other way restraining her movement or physically hurting her), <u>but you did not</u>, to make her do the following when she didn't want to?

17. sex play
18. attempted sexual intercourse
19. sexual intercourse
20. other sexual acts

How often have you used physical force (such as cornering her, pinning her against a wall, grabbing her, holding her down, hitting her, or otherwise restraining her movement or physically hurting her) to make her do any of the following when she did not want to?

21. sex play
22. attempted sexual intercourse
23. sexual intercourse
24. other sexual acts

How often have each of the following occurred when you knew she did not want it to happen, but she was so intoxicated or under the influence of alcohol or drugs that she could not object?

25. sex play
26. attempted sexual intercourse
27. sexual intercourse
28. other sexual acts

How often has each of the following occurred when you knew she did not want it to because you deliberately gave her alcohol or drugs so she could not object?

29. sex play
30. attempted sexual intercourse
31. sexual intercourse
32. other sexual acts

APPENDIX B

COLOR-NAMING STIMULI

SEXUAL WORDS

List A		List B	
intercourse	swollen	penetration	throbbing
climax	breasts	orgasm	nipples
lust	suck	sexy	lick
erotic	stimulated	sensual	excited

AGGRESSIVE WORDS

List A		List B	
aggressive	pressure	coerce	overpowers
force	slap	dominate	scream
manipulate	resist	threaten	scratch
angry	conflict	control	hurt

SEXUALLY COERCIVE WORDS

List A		List B	
screw	refusing	tease	protest
rape	violent	rape	ramming
pussy	grab	cock	rough
conquest	thrust	fuck	restrain

NEGATIVE WORDS

List A		List B	
rude	gullible	bigoted	stupid
stubborn	impatient	selfish	jealous
moody	messy	irritable	insecure
annoying	failure	immature	shallow

APPENDIX C

LENGTH OF WORD AND FREQUENCY MEANS

LENGTH OF WORD GROUP MEANS

	LIST A	LIST B
SEXUAL	6.87	6.87
AGGRESSIVE	7.00	7.00
SEXUALLY COERCIVE	5.87	5.10
NEGATIVE	6.75	7.37

FREQUENCY OF USAGE GROUP MEANS

	LIST A	LIST B
SEXUAL	8.62	7.50
AGGRESSIVE	24.37	13.87
SEXUALLY COERCIVE	15.12	11.87
NEGATIVE	16.37	8.25

APPENDIX D

CONSENT FORM

I agree to participate in the present study being conducted under the supervision of Dr. White, a faculty member of the Psychology Department of the University of North Carolina at Greensboro. I have been informed orally about the procedures to be followed and about any discomforts or risks which may be involved. The investigator has offered to answer further questions that I may have regarding the procedures of this study. I understand that I am free to terminate my participation at any time without any penalty or prejudice. I am aware that further information about the conduct and review of human research at the University of North Carolina at Greensboro can be obtained by calling 334-5878, the Office for Sponsored Programs.

_____ _____ _____ _____

Day Month Year Signature of Participant

APPENDIX E

DEBRIEFING STATEMENT

Previous research has shown that individuals differ in the speed with which they can do a color naming task such as the one you just completed depending on the meanings of the words. For example: if the words in the list are color words printed in conflicting ink colors, the meanings of the words interfere with a person's ability to name the colors of the ink. This effect has been labeled the Stroop Effect.

In this experiment, we will be looking at the relationship between reaction times for the lists of words you just completed with some attitudinal variables that you responded to a couple of questionnaires during mass testing. Since this is the first study of this kind that has been done in this area of sexual attitudes, we are unsure of what we will find concerning this relationship between interference on the color naming task and attitudes.

We are also interested in looking at memory for the different color and evaluated words. We will be assessing your accuracy in distinguishing between words you actually saw from these two tasks and new words in which you might have thought you saw. This way we can assess the role of awareness on memory.

Thank you for your participation. If you have any questions regarding this study, please direct them to Dr. White of the Psychology Department, 334-5013.

APPENDIX F

ANOVA TABLES

COLOR-NAMING TASK*

Table 1
Within-group main effect for word type.

Source	df	SS	MS	F	p
WORD	3	790.43	263.43	9.16	.0001
error	102	2933.23	28.76		

* based on a sample of n=38

Table 2
Word by list interaction.

Source	df	SS	MS	F	p
WORD X LIST	3	293.54	97.85	3.40	.0229
error	102	2933.23	28.76		

* based on a sample of n=38

APPENDIX F

ANOVA TABLES

EVALUATION TASK*

Table 3
Within-group main effect for word type.

Source	df	SS	MS	F	p
WORD	3	75.41	25.13	136.11	.0001
error	99	18.28	.18		

* based on a sample of n=37

Table 4
Word by list interaction.

Source	df	SS	MS	F	p
WORD X LIST	3	3.43	1.14	6.19	.0029
error	99	18.28	.18		

* based on a sample of n=37

APPENDIX F

ANOVA TABLES

RECOGNITION TASK*

Table 5
Overall group by list interaction.

Source	df	SS	MS	F	p
GROUP x LIST	1	3.79	3.79	2.82	.1025
error	33	14.80	.45		

* based on a sample of n=37

Table 6
Within-group main effect for correctly recognized words.

Source	df	SS	MS	F	p
WORD	3	.20	.07	10.43	.0001
error	99	.63	.01		

* based on a sample of n=37

APPENDIX F

ANOVA TABLES

RECOGNITION TASK*

Table 7
Group by list interaction for source errors.

Source	df	SS	MS	F	p
GROUP x LIST	1	.46	.46	4.19	.0487
error	33	3.65	.11		

* based on a sample of n=37

Table 8
Within-group main effect for word type for source errors.

Source	df	SS	MS	F	p
WORD	3	.75	.25	7.51	.0002
error	99	3.29	.03		

* based on a sample of n=37

APPENDIX F

ANOVA TABLES

RECOGNITION TASK*

Table 9
Group by list interaction for false inclusion errors.

Source	df	SS	MS	F	p
GROUP x LIST	1	.58	.58	2.39	.0500
error	33	4.62	.14		

* based on a sample of n=37

Table 10
Within-group main effect for word type for false inclusion errors (false alarms).

Source	df	SS	MS	F	p
WORD	3	1.61	.54	22.69	.0001
error	99	2.34	.02		

* based on a sample of n=37

APPENDIX F

ANOVA TABLES

RECOGNITION TASK*

Table 11
Within-group main effect for word type for false exclusion errors (misses).

Source	df	SS	MS	F	p
WORD	3	3.66	1.22	24.38	.0001
error	99	4.95	.05		

* based on a sample of n=37

APPENDIX F

ANOVA TABLES

CERTAINTY RATINGS*

Table 12
Within-group main effect for word type for certainty ratings of correctly recognized words.

Source	df	SS	MS	F	p
WORD	3	.92	.31	3.23	.0314
error	96	9.16	.10		

* based on a sample of n=36

Table 13
Word by list interaction for certainty ratings of correctly recognized words.

Source	df	SS	MS	F	p
WORD X LIST	3	1.18	.39	4.12	.0115
error	96	9.16	.10		

* based on a sample of n=36

APPENDIX F

ANOVA TABLES

CERTAINTY RATINGS*

Table 14
Within-group main effect for certainty ratings of three main errors--source, false inclusion, false exclusion.

Source	df	SS	MS	F	p
ERROR	2	22.80	11.40	18.64	.0001
error	64	39.10	.61		

* based on a sample of n=37

Table 15
Within-group main effect for word type for certainty ratings of source errors.

Source	df	SS	MS	F	p
WORD	3	6.16	2.05	3.02	.0429
error	81	55.10	.68		

* based on a sample of n=31

APPENDIX F

MEANS TABLES

COLOR-NAMING REACTION TIME MEANS

Table 1
Color Naming difference score reaction time means and standard deviations by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	15.2± 9.3	18.6± 7.3	8.8±11.7	14.1±11.8
NSA--B	10.5±10.3	11.8±11.9	9.3±13.3	14.5±13.5
SA--A	15.3± 6.3	19.7± 7.9	10.4± 7.1	11.0± 5.4
SA--B	14.1± 8.3	16.2± 9.5	11.8± 9.6	13.9± 8.2

Note: Above means are difference scores derived by subtracting average Stroop reaction times from word type reaction times. Scores closer to zero represent more difficult word types to process as the Stroop reaction times were the slowest.

APPENDIX F

MEANS TABLES

EVALUATION RATING MEANS

Table 2
Evaluation means and standard deviations by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	3.6 ± .6	2.1 ± .4	2.2 ± .5	1.6 ± .4
NSA--B	3.6 ± .6	2.1 ± .5	2.6 ± .5	2.0 ± .4
SA--A	4.0 ± .5	2.3 ± .5	2.3 ± .3	1.4 ± .4
SA--B	3.6 ± .6	2.1 ± .5	2.6 ± .6	1.9 ± .5

Note: A Likert-type scale was used where 1=very negative and 5=very positive.

APPENDIX F

MEANS TABLES

RECOGNITION MEANS

Table 3
Correctly recognized word means and standard deviations for word types by group (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	.68 ± .12	.53 ± .14	.63 ± .10	.65 ± .08
NSA--B	.63 ± .11	.51 ± .07	.60 ± .12	.64 ± .10
SA--A	.56 ± .16	.49 ± .14	.55 ± .15	.55 ± .09
SA--B	.65 ± .08	.60 ± .14	.60 ± .11	.60 ± .12

APPENDIX F

MEANS TABLES

RECOGNITION MEANS

Table 4
Source recognition error means and standard deviations for word types by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	.22 ± .06	.28 ± .14	.22 ± .11	.15 ± .11
NSA--B	.29 ± .12	.23 ± .11	.26 ± .09	.16 ± .11
SA--A	.29 ± .13	.29 ± .16	.27 ± .11	.19 ± .13
SA--B	.21 ± .11	.13 ± .10	.18 ± .10	.13 ± .10

APPENDIX F

MEANS TABLES

RECOGNITION MEANS

Table 5
False inclusion recognition error (false alarm) means and standard deviations for word types by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	.15 ± .04	.22 ± .14	.14 ± .10	.08 ± .06
NSA--B	.23 ± .12	.27 ± .09	.16 ± .12	.09 ± .11
SA--A	.26 ± .12	.31 ± .13	.21 ± .14	.17 ± .13
SA--B	.18 ± .10	.18 ± .15	.16 ± .13	.08 ± .08

APPENDIX F

MEANS TABLES

RECOGNITION MEANS

Table 6
False exclusion recognition error (miss) means and standard deviations for word types by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	.11 ± .13	.21 ± .10	.20 ± .14	.30 ± .16
NSA--B	.04 ± .07	.23 ± .09	.18 ± .10	.32 ± .15
SA--A	.12 ± .17	.17 ± .10	.16 ± .17	.29 ± .18
SA--B	.13 ± .09	.29 ± .20	.21 ± .15	.37 ± .19

APPENDIX F

MEANS TABLES

CERTAINTY RATING MEANS

Table 7
Certainty rating means and standard deviations of correctly recognized words by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	2.5 ± .6	2.5 ± .9	2.6 ± .8	2.6 ± .8
NSA--B	2.0 ± .5	2.3 ± .6	2.0 ± .6	1.9 ± .6
SA--A	2.2 ± .7	2.2 ± .7	2.2 ± .7	2.3 ± .7
SA--B	2.1 ± .8	2.5 ± 1.0	2.3 ± 1.0	2.0 ± .9

Note: A Likert-type scale was used where 1=absolutely sure and 6= absolutely unsure.

APPENDIX F

MEANS TABLES

CERTAINTY RATING MEANS

Table 8
Certainty rating means and standard deviations of source errors by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	2.3 ± .7	3.0 ± 1.6	1.9 ± 1.1	2.4 ± 1.6
NSA--B	2.0 ± .7	2.3 ± .9	2.1 ± .9	2.0 ± .7
SA--A	2.2 ± 1.3	2.7 ± 1.2	2.5 ± .5	2.6 ± 1.2
SA--B	2.0 ± .8	2.9 ± 1.6	2.3 ± 1.1	2.3 ± 1.8

APPENDIX F

MEANS TABLES

CERTAINTY RATING MEANS

Table 9
Certainty rating means and standard deviations of false inclusion errors (false alarms) by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	2.9 ± .6	3.1 ± 1.3	3.5 ± 1.7	3.2 ± .6
NSA--B	3.3 ± 1.6	3.2 ± 1.0	3.1 ± 1.3	3.5 ± .9
SA--A	3.1 ± 1.2	3.0 ± .9	3.4 ± 1.4	3.8 ± 1.2
SA--B	2.6 ± 1.5	2.9 ± 1.4	3.2 ± 2.0	3.2 ± 1.6

APPENDIX F

MEANS TABLES

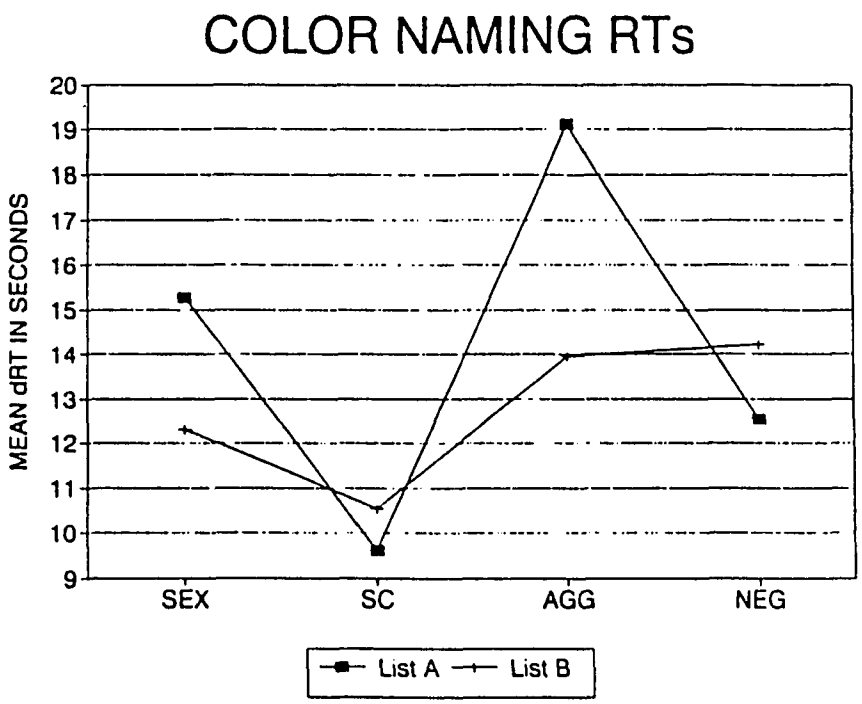
CERTAINTY RATING MEANS

Table 10
Certainty rating means and standard deviations of false exclusion errors (misses) by group type (sexually aggressive-SA and sexually nonaggressive-NSA) and list type.

GROUP TYPE (SA--LIST)	WORD TYPE			
	SEX	AGG	SC	NEG
NSA--A	3.7 ± 1.8	3.7 ± 1.1	4.2 ± 1.4	4.4 ± 1.2
NSA--B	3.0 ± 1.4	3.6 ± 1.3	3.1 ± 1.5	2.8 ± .9
SA--A	3.1 ± 1.4	3.3 ± 1.4	3.0 ± 2.0	2.6 ± 1.1
SA--B	3.4 ± 1.7	3.2 ± 1.2	3.5 ± 1.3	3.1 ± 1.4

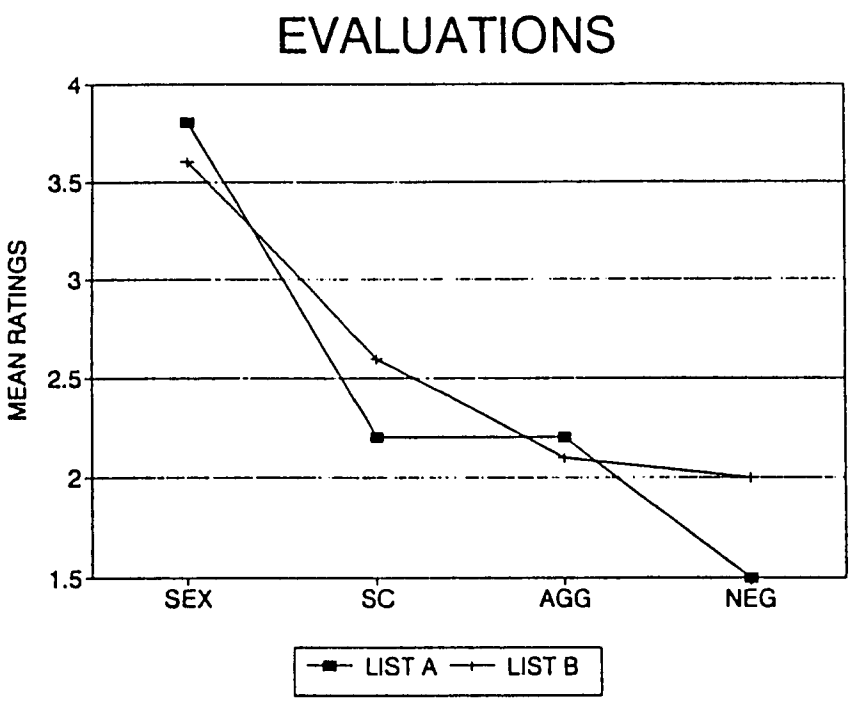
APPENDIX G

FIGURES



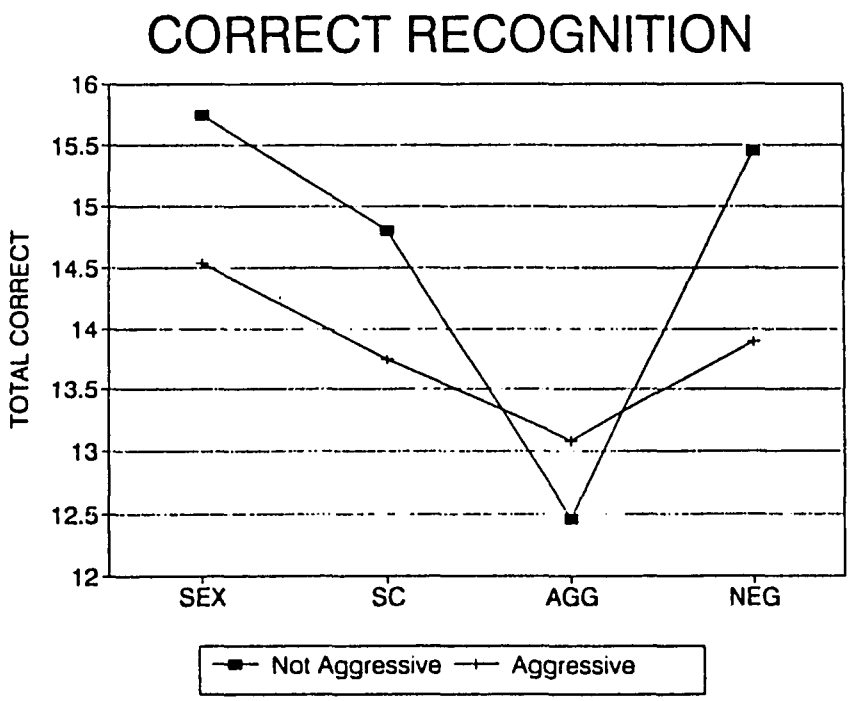
APPENDIX G

FIGURES



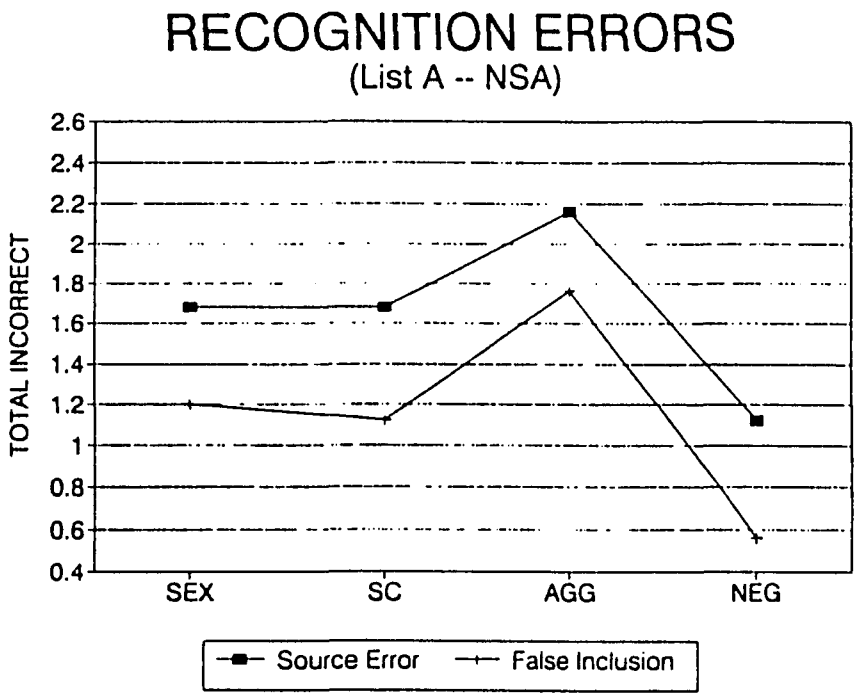
APPENDIX G

FIGURES



APPENDIX G

FIGURES



APPENDIX G

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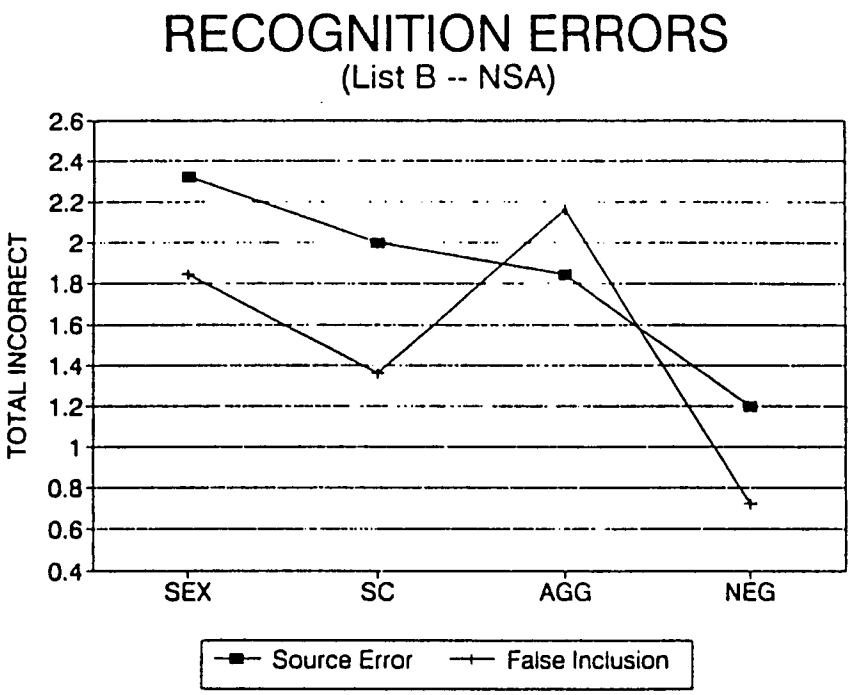

APPENDIX G

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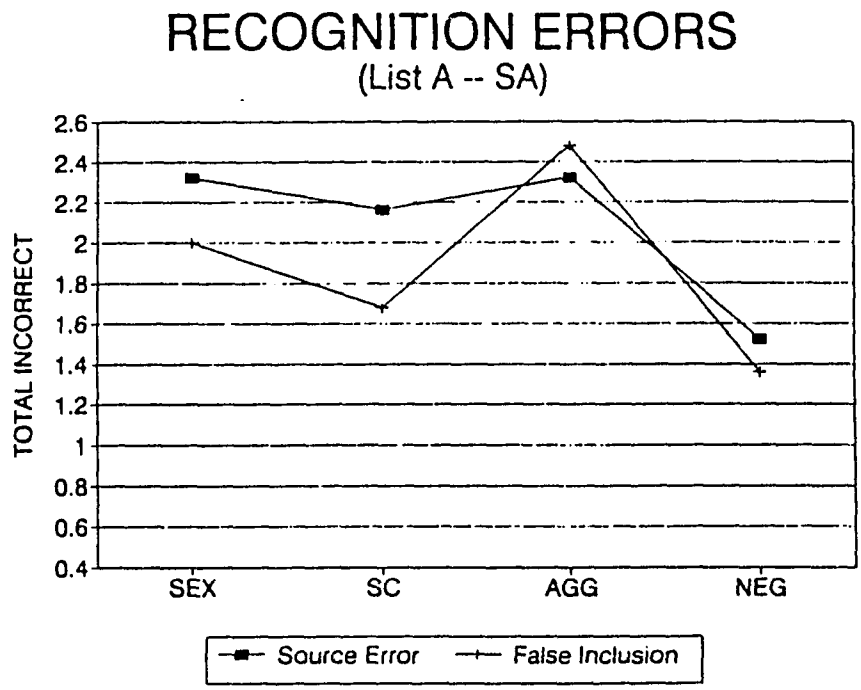
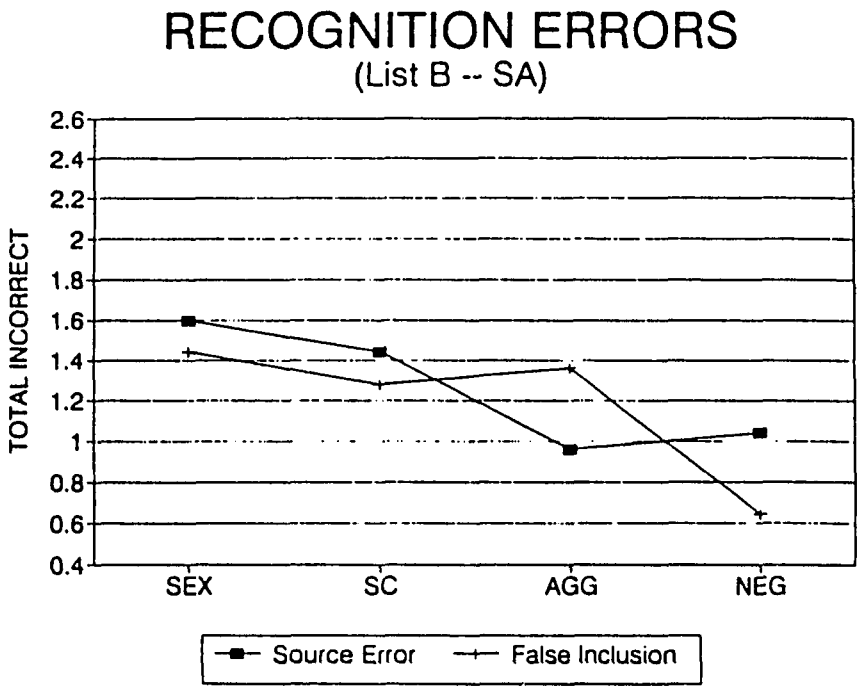


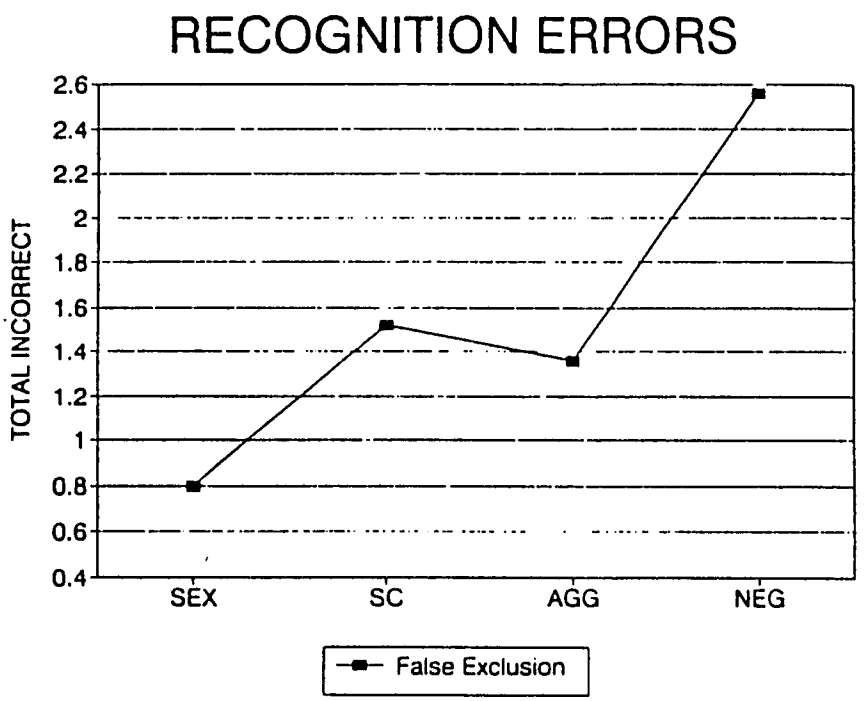
APPENDIX G

FIGURES



APPENDIX G

FIGURES



APPENDIX G

FIGURES