

Effects of Television Sitcom Exposure on the Accessibility of Verbally Aggressive Thoughts

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This study examined the effects of exposure to verbally aggressive television sitcoms on the accessibility of aggressive cognitive responses within the framework provided by the General Aggression Model (Anderson & Bushman, 2002). Participants viewed either a sitcom or a crime drama and then completed a thought-listing task and measures of affective state, arousal, and trait verbal aggressiveness. Results indicated that during sitcom exposure, participants produced a statistically significant number of aggressive cognitive responses, with character attacks being the most common type, followed by competence attacks. Furthermore, when controlling for the effects of affect and arousal, the television exposure condition and trait verbal aggressiveness interacted to predict aggressive cognitive responses. Trait verbal aggressiveness predicted aggressive cognitive responses during sitcom exposure, but not during crime drama exposure. Finally, sitcom viewers produced a marginally higher number of aggressive cognitive responses than did viewers of the crime drama.

A GREAT DEAL OF literature has suggested that exposure to television violence can lead to a heightened level of aggressive behavior in subsequent interactions (Bushman & Anderson, 2001; Comstock & Strasburger, 1990; Friedrich-Cofer & Huston, 1986; Hearold, 1986; Paik & Comstock, 1994; Wood, Wong, & Chachere, 1991). Most of this research has focused on the effects of television's portrayals of physical violence, while much less research has focused on the influence of exposure to verbally aggressive television content or violence that occurs in a humorous context. Although viewers may not conceptualize television violence that is relatively humorous, harmless, and/or unrealistic (e.g., sitcom verbal aggression or offensive language) as violent (Eyal & Rubin, 2003; Potter & Berry, 1999), or tend not to be upset about violence appearing in a humorous context (Potter, Pashupati, Pekurny, Hoffman, & Davis, 2002), exposure to such content has been

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said to increase the probability that viewers will experience desensitization to it and disinhibition toward its use (Kaye & Sapolsky, 2001; Potter, 1997, 1999).

Given the prevalence of television verbal aggression (*National television violence study*, 1997, 1998; Potter & Warren, 1998) and the lower inhibition levels for imitation of aggressive communication versus physical violence, Potter (1997, 1999) calls for an investigation of the effects of exposure to such media violence. He recommends that researchers include "low-profile aggressive behaviors such as impatience, rudeness, and the like" as outcomes (p. 188). Furthermore, Potter et al. (2002) suggest that scholars conduct experiments examining the differences in viewer interpretations of violence across genres. The present study responds to these calls through its examination of the immediate effects of exposure to television sitcoms' humorous verbal violence on the aggressiveness of individuals' cognitive responses. In addition, this study compares these sitcom-generated cognitive responses to those produced by viewers of a crime drama. The current investigation examines this topic by applying the General Aggression Model (Anderson & Bushman, 2002) and a rationale developed from the literature on priming and construct accessibility to the study of television sitcoms.

Verbal Aggression

Verbal aggression involves "attacking the self-concept of another person instead of, or in addition to, the person's position on a topic of communication" (Infante & Wigley, 1986, p. 61). Attacking the self-concept of another may involve insulting the other's character, competence, background, or physical appearance. Verbal aggression may also be expressed as maledictions (wishing harm on another), teasing, ridicule, threats, swearing, or nonverbal emblems (kinesic behaviors that are functionally equivalent to words) (Infante & Wigley, 1986) (Infante, Sabourin, Rudd, & Shannon, 1990). Several studies and scholars suggest that verbal aggression can lead to a wide range of negative outcomes from embarrassment to physical aggression and long-term damage to one's emotional and mental health (Infante, 1987; Infante & Rancer, 1996; Infante, Chandler, & Rudd, 1989; Infante & Wigley, 1986; Infante et al., 1990; Roloff, 1996).

Infante, Trebing, Sheperd, and Seeds (1984) identified four main causes of verbal aggression, including psychopathology, disdain for the receiver of the verbal aggression, social learning, and an argumentative skill deficiency. The argumentative skill deficiency model (Infante et al., 1989) proposes that individuals resort to verbal aggression because they lack the argumentation skills for dealing with conflict constructively. According to this model, when unskilled arguers' ideas are attacked, they feel a need to defend themselves, but do not have the necessary skills. Therefore, they mount a defense of the object closest

to their position on the issue—themselves (Infante, 1987). In doing so, unskilled arguers perceive their conversational partners' attacks on positions as attacks on themselves, leading the unskilled arguers to feel justified in introducing verbal aggression into the conversation. Due to the norm of reciprocity that appears to operate in aggressive communication (Infante, 1988), the conversational partner responds with verbal aggression. In short, unskilled arguers may incite others to engage in verbal aggression, thus heightening the level of negative arousal (Infante et al., 1989). According to Wigley (1998), current research seems to provide substantial evidence that the argumentative skill deficiency explanation and social learning are the two main causes of verbal aggression.

In addition to verbal aggression being considered a communication behavior, the predisposition to attack the self-concepts of others may also be considered a trait (Infante & Wigley, 1986). Beatty and McCroskey (1997) recently proposed a theory of trait verbal aggressiveness, based on the principles of psychobiology as contained in the literature on temperament, which states that trait verbal aggressiveness is one's expression of inborn, biological differences. Specifically, they propose that individuals high in trait verbal aggressiveness have a low threshold for behavioral activation system and fight or flight system activity and a high threshold for behavioral inhibition system activity (see Gray, 1991). Beatty and McCroskey contend that individuals high in trait verbal aggressiveness need less stimulation of the neurobiological circuitry underlying their behavioral systems to bring about aggressive responses and more stimulation to inhibit aggressive responses. Research conducted by Valencic, Beatty, Rudd, Dobos, and Heisel (1998) provides support for Beatty and McCroskey's propositions.

Over the past 30 years, verbal aggression has become more common than physical aggression on television (Greenberg, Edison, Korzenny, Fernandez-Collado, & Atkin, 1980; Potter, 1999; Potter & Vaughn, 1997; Potter & Ware, 1987; Williams, Zabrack, & Joy, 1982; Wotring & Greenberg, 1973), with sitcoms containing a particularly sharp increase in verbal aggression. For example, in the early 1970s comedy programming began to move from the comedy-variety format to that of the situation comedy, with an accompanying increase in verbally aggressive comedy. This type of comedy was exemplified by the communication on *All in the Family*. According to Zillmann and Bryant (1991), "insults, put-downs, racist remarks, and other forms of veiled viciousness ruled the day" on *All in the Family* (p. 265). This pattern endured into the late 1980s with the "raucous and sometimes vicious" *Roseanne's* success (Zillmann & Bryant, 1991, p. 266). Through the 1990s to today, verbally aggressive humor has continued to dominate the landscape of television sitcoms with programs like *Will & Grace* and *Everybody Loves Raymond*. More specifically, verbal aggression in

sitcoms increased from 33.5 acts per hour in the mid-1970s to 41.9 acts per hour in 1994 (Potter & Vaughn, 1997). Furthermore, sitcoms have consistently had the highest rates of verbal aggression compared to other genres (Greenberg et al., 1980; Potter & Ware, 1987; Potter & Vaughn, 1997; Potter, Warren, Vaughan, Howley, Land, & Hagemeyer, 1997; Williams et al., 1982).

The General Aggression Model and Priming Aggressive Thoughts

The means by which verbally aggressive television programming may influence aggressiveness may be explained by the General Aggression Model (Anderson & Bushman, 2002). The General Aggression Model has been used in its various forms for several years (e.g., Anderson, 1997; Anderson, Anderson, & Deuser, 1996; Anderson, Deuser, & DeNeve, 1995; Anderson & Dill, 2000) and is based on earlier theories, including Berkowitz's (e.g., 1990) cognitive-neoassociationistic analysis of aggression and Zillmann's excitation transfer theory (e.g., 1983).

The General Aggression Model describes a multistage process by which the input variables of personality (e.g., trait verbal aggressiveness) and situation (e.g., exposure to violent media) lead to aggressive behavior via the three internal states of cognition (e.g., aggressive thoughts), affect (e.g., hostile feelings), and arousal (physiological or perceived) and the outcomes of automatic and controlled appraisal and decision processes. The present study focuses on the first stage of the model, which posits that situational and personality variables combine, sometimes interactively, to affect one, two, or all three of the internal states. Of primary interest in the present study is the part of this first stage that centers on the effects that situational (e.g., exposure to television sitcoms) and personality (e.g., trait verbal aggressiveness) variables have on the internal state of cognition (e.g., aggressive cognitive responses).

According to Anderson et al.'s (1996) General Aggression Model, input variables, such as violent media or trait hostility, affect the cognitive internal state by increasing the accessibility of certain cognitions (thoughts, schemata, behavioral scripts); affect the affective state by creating certain moods; and influence the arousal state through excitation transfer (Zillmann, 1983). In addition to the three internal states being affected by the input variables, the General Aggression Model also proposes that the three internal states are interrelated and affected by each other (Anderson & Bushman, 2002). This aspect of the General Aggression Model is based on the cognitive-neoassociationistic perspective (CNA) (Anderson & Bower, 1973; Landman & Manis, 1983) and related work on priming and spreading activation (Berkowitz, 1984; Jo & Berkowitz, 1994).

The CNA perspective conceives of human memory as a collection of networks containing nodes representing substantive elements of thoughts, feelings, behavioral tendencies, etc. These nodes are linked through associative pathways, the strength of which is affected by contiguity, similarity, and semantic relatedness (Jo & Berkowitz, 1994). When experiencing an event via the mass media or any other channel, the CNA perspective suggests that ideas similar to the event are activated in one's mind for a short time afterwards. This initial activation acts as a *prime* that involuntarily activates other semantically related thoughts, emotions, or behavioral tendencies, making them more likely to come to mind (Berkowitz, 1984; Jo & Berkowitz, 1994). In this "spreading activation" process, it appears that some enduring excitation at the initially activated node temporarily makes it easier for thoughts and feelings related to that concept to be activated (Berkowitz, 1984). Relating this CNA-based spreading activation process to the General Aggression Model, Anderson et al. (1996) state that when incoming information has anger-eliciting properties that can be interpreted in a biased manner, both aggression-related cognitions and affect may be influenced. This spreading activation depends on the strength of the initial prime/activation and the strength and interconnectedness of the cognition and affect states (Anderson, 1997; Anderson & Dill, 2000).

Mass media research has supported General Aggression Model-based predictions concerning media violence's priming effect on aggressive constructs. For example, Bushman and Geen (1990) demonstrated that exposure to violent film clips elicited more aggressive thoughts than did exposure to nonviolent clips, and Anderson (1997) showed that violent movie exposure increased aggressive affect. In addition, Bushman (1998) showed that immediately after exposure to a violent film, participants demonstrated faster reaction times to aggressive words than did participants who viewed a nonviolent film. In a related study, college students who were exposed to a violent movie later associated homonyms (that could have an aggressive or non-aggressive meaning) and non-aggressive words with more aggressive words than did those who were exposed to an equally exciting, but nonviolent film. These findings suggest that exposure to the violent media primed and increased the accessibility of aggressive constructs in participants' minds, making participants react more quickly to aggressive cues and associate stimuli with more aggressive meanings (Bushman, 1998).

Research on the effects of playing violent video games and listening to violent music is also consistent with the General Aggression Model. A meta-analysis by Anderson and Bushman (2001) revealed that playing violent video games increased aggressive thoughts, aggressive affect, and physiological arousal. Similarly, Anderson, Carnagey, and Eubanks (2003) found that listening to violent lyrics in both humorous

and non-humorous songs increased state hostility and the accessibility of aggressive constructs in memory.

The General Aggression Model and Sitcom Verbal Aggressiveness

Although the effects of exposure to media physical violence, video-games, and violent song lyrics have been studied within the priming and General Aggression Model framework, there appears to be very little research that specifically addresses the effects of exposure to television verbal aggression in terms of priming or the General Aggression Model. The existing research on this topic, conducted by Chory-Assad and Tamborini (2001; in press), investigated the relationship between television sitcom exposure and aggression from a construct accessibility perspective using experimental and survey research methods. In the experiment, Chory-Assad and Tamborini (2001) predicted that exposure to television sitcoms high in verbal aggression would prime verbal aggression and related mental constructs that would then appear in participants' discussions with confederates. Results show that although the means for participants' post-exposure verbal aggressiveness tended to be in the hypothesized direction, no significant differences between the high verbal aggression sitcoms, low verbal aggression sitcoms, and control exposure conditions occurred immediately after exposure. Chory-Assad and Tamborini's (in press) survey research examined the relationship between self-reported exposure to sitcoms and aggressive communication during a question-response session. Chory-Assad and Tamborini (in press) reasoned that regular exposure to television sitcoms would frequently prime aggression-related constructs, making them chronically accessible, and more likely to come to mind and to be used in communicating. No evidence supporting these expectations was found. Instead, increased sitcom exposure was associated with lower levels of aggressive communication.

Chory-Assad and Tamborini (2001) suggested their findings may point toward sitcoms as being incapable of acting as aggressive primes, citing Potter and Warren's (1998) suggestion that viewers use unitized schemas when processing comedy narratives. Potter and Warren explain that when using a unitized schema, discrepancies between the schema and details of the stimuli are ignored by the viewer. According to this perspective then, when exposed to television comedy, discrepant content, such as aggression, should not be noticed, or should be ignored when noticed. Similarly, Potter and Smith (2000) reasoned that because context cues viewers about how television action is to be perceived and interpreted, viewers of non-graphic television violence (e.g., victim of violence is not shown as physically altered) are more likely to focus on the plot or characters, rather than on the aggression. Therefore, a schema focused on story or character, rather than aggression, is activated in viewers' minds. Because television verbal aggression is

non-graphic by nature, it may cue viewers to pay attention to program elements other than aggression. As such, Chory-Assad and Tamborini (2001) suggested that exposure to verbally aggressive sitcoms may activate non-aggressive constructs that are more closely related to pleasant communication that leads to successful social relations, rather than thoughts of hurtful communication.

The goal of the present research is to help clarify the seemingly contradictory evidence and reasoning concerning the effects of television sitcom verbal aggression by examining the nature of the thoughts made accessible through television sitcom exposure. On the one hand, logic based on the General Aggression Model and priming suggests that exposure to television sitcoms, which tend to be characterized by high degrees of verbal aggression (*National television violence study*, 1997, *National television violence study*, 1998; Potter & Warren, 1998), should prime aggression-related thoughts in the minds of viewers. This reasoning is also supported by Anderson et al.'s (2003) findings that listening to humorous violent songs increased aggressive constructs in listeners' minds. On the other hand, Potter and Warren's (1998) suggestion that viewers use unitized schemas when processing comedy narratives and Potter and Smith's (2000) suggestion that non-graphic aggression may cue non-aggressive schema imply that sitcom verbal aggression should not be perceived by viewers and therefore, should not affect the accessibility of aggressive mental constructs. Empirical evidence provided by Chory-Assad and Tamborini (2001, in press) may be interpreted as support for these latter two explanations.

To assess the nature of the thoughts generated by exposure to television sitcoms, the present research employs thought-listing tasks that have been used to assess effects of exposure to physically aggressive media on mental construct accessibility (e.g., Bushman & Geen, 1990). The nature of the mental constructs activated by sitcoms are assessed here and compared to the constructs activated by another genre, the crime drama. Such a comparison allows not only the nature of sitcom viewers' thoughts to be examined, but the role that context plays in the relationship between exposure to aggression and responses to also be investigated. As Chory-Assad and Tamborini (in press) noted, the humorous context of verbally aggressive sitcoms may decrease the aggression-related effects associated with exposure to this genre, while the context of other genres may increase these effects.

Based on the General Aggression Model, priming logic, and Anderson et al.'s (2003) findings, the following hypothesis regarding the nature of the cognitive responses produced by exposure to television sitcoms was posited:

H1: Television sitcom exposure will elicit a statistically significant number of aggressive cognitive responses.

Assuming that a statistically significant number of aggressive cognitive responses are produced during sitcom exposure, the question arises as to which types of verbal aggression the responses represent. Based on the spreading activation perspective, exposure to verbally aggressive television should first activate thoughts that are most closely associated in semantic space with the aggressive behavior observed. As such, it is expected that the forms of verbal aggression that viewers observe in the television programming would be activated first and with the most strength. Content analyses by Martin, Koehn, Weber, and Mottet (1997) and Chory (2000) show that character attacks (e.g., "You are a mean, vindictive person," "You have no morals"), followed by competence attacks (e.g., "You are so stupid," "You can't do anything right"), are the most common types of verbal aggression communicated in sitcoms. A spreading activation perspective might suggest that the character attacks prevalent in this content would first, and most strongly, activate thoughts related to this type of verbal aggression. These thoughts of character attacks might then spread with slightly less strength to other types of verbal aggression, such as competence attacks, because of their semantic closeness with character attacks. Competence attacks are expected to be the second most common type of aggressive cognitive response generated during sitcom exposure not only because of spreading activation, but because they are the second most common form of sitcom verbal aggression. Therefore, exposure to sitcoms is expected to also directly prime mental constructs related to competence attacks. The activation of character and competence attacks in viewers' minds should then spread with less strength to thoughts representing other types of verbal aggression. The second hypothesis concerns these predictions.

H2: Character attacks will be the most common type of aggressive cognitive response produced during television sitcom exposure, followed by competence attacks.

In the present study, participants are exposed to either a sitcom or a crime drama prior to the assessment of their aggressive cognitions. The degree to which individuals like and enjoy the television program they view may influence their mood and arousal. According to the General Aggression Model, this influence may spread to affect aggressive cognitions. Likewise, feeling frustrated or angry, and being in a bad mood, which may be provoked by having to view a disliked program, have been cited as triggers of verbal aggression (Infante, Riddle, Horvath, & Tumlin, 1992; Infante et al., 1984; Infante & Wigley, 1986). Because the General Aggression Model posits that the three internal states are interrelated, it is necessary to control for the effects that affect and arousal may have on cognitions to more clearly examine the effects that the input variables have on cognitions. Therefore, in the present study participants' liking of the program viewed in the lab and their perceived arousal will be controlled when examining the relationships between television exposure and aggressive cognitions.

Exposure to violent media is expected to prime aggression-related thoughts. As such, exposure to a crime drama, which is a serious presentation surrounding crime, police, or law enforcement (Reith, 1999; Tamborini, Mastro, Chory-Assad, & Huang, 2000) is expected to produce aggressive cognitive responses during exposure. On the other hand, the effects of exposure to verbally aggressive sitcoms on aggressive thoughts are unclear. The General Aggression Model and priming logic suggest that sitcom exposure should be associated with increased accessibility of aggressive thoughts. In contrast, Potter and Warren's (1998), Potter and Smith's (2000), and Chory-Assad and Tamborini's (2001, in press) work suggest that exposure to sitcoms may not be related to the accessibility of aggressive constructs but may activate non-aggressive thoughts. Because the effects of exposure to sitcoms on aggressive thoughts are undetermined, whereas the effects of exposure to the serious nature of the crime drama are more straightforward, the following hypothesis was posited.

H3: When controlling for liking the program viewed in the lab and perceived arousal, type of television exposure will predict the number of aggressive cognitive responses produced during television exposure, with exposure to a crime drama being associated with more aggressive cognitive responses than exposure to a sitcom.

The General Aggression Model suggests that in addition to the situational variable of television aggression, the personological variable of aggressive personality can influence individuals' present internal cognitive state. This theorizing is supported by research showing that people who score high on aggressive personality measures think aggressive thoughts more frequently than do those who score low on aggressive personality measures (e.g., Anderson, 1997; Anderson et al., 2003). Due to the frequent use of verbal aggression and its repeated activation of aggression-related constructs, persons who are high in trait verbal aggressiveness may be more likely than those low in trait verbal aggressiveness to have aggression-related constructs accessible prior to aggressive television exposure. Based on the General Aggression Model and past research, the following hypothesis is advanced.

H4: When controlling for liking the program viewed in the lab and perceived arousal, trait verbal aggressiveness will positively predict the number of aggressive cognitive responses produced during television exposure.

As previously mentioned, the General Aggression Model does not assume that the input variables of personality and situation operate independently of one another in affecting the internal states. In fact, some interactions between input variables are expected depending on the nature of the input variable, the context, and the dependent variable (Anderson et al., 1996). For example, Bushman and Geen (1990) found that exposure to violent films interacted with the individual difference variable of *stimulus screening* to predict aggressive cognitions. In interpreting this interaction effect, Bushman and Geen no-

ticed that the individual difference variable affected aggressive cognitions with the greatest strength in the moderately violent film clip condition. They suggested that the moderately violent film clips may not have been considered clearly violent or nonviolent by viewers, thus situational cues did not overpower individual differences.

Bushman and Geen (1990) further suggested that the reason personality affected aggressive cognitions in the moderately violent media condition was because personality may affect encoding when the stimulus is ambiguous. Applied to the present study, viewers may not consider verbally aggressive sitcoms as unequivocally aggressive or non-aggressive—while sitcoms do contain aggressive communication, it is responded to with audience laughter and occurs in a humorous context. As such, sitcoms may be perceived as an ambiguous stimulus, causing individual differences to play a greater role in determining responses to them than individual differences would play in responding to a clearly aggressive or non-aggressive television program. Based on this reasoning, the fifth hypothesis was advanced.

H5: When controlling for liking the program viewed in the lab and perceived arousal, the interaction of the television exposure condition and trait verbal aggressiveness will predict the number of aggressive cognitive responses produced during television exposure, with trait verbal aggressiveness being a stronger predictor of the number of aggressive cognitive responses produced during sitcom exposure than it will during crime drama exposure.

Methods

Participants

Participants were 189 undergraduate students (57.1% female) in a communication course at a mid-Atlantic university during the spring of 2001. Approximately 91.5% of the participants reported their race as White, 5.8% were African-American, and 2.7% indicated they were of another race. Participants' average age was 20.8 years, with an average family household income between \$30,001 and \$70,000. Participation was voluntary and took place outside of the participants' regularly scheduled class times. Minimal extra credit was granted for participation.

Procedures

Upon entering the lab, participants were randomly assigned to either the sitcom or drama exposure group. They were then seated at tables and were instructed to view the given program. Participants viewed the program on a color television in a small classroom in groups ranging from 2 to 16 participants ($M = 8.54$, $SD = 3.81$). After the program ended, a thought-listing task was distributed. The researcher told the participants that she was now interested in finding out what they were thinking about while they viewed the television show. Using

procedures, instructions, and forms drawn from Cacioppo and Petty (1981), participants were instructed to write down everything they were thinking during the television program, and to ignore grammar, spelling, and punctuation. Participants were given three minutes to complete the thought-listing task. After the thought-listing task was finished, scales to measure arousal, to evaluate the program viewed, and to assess trait verbal aggressiveness were completed. Participants were then debriefed about the study and their questions were answered by the researcher. Participants were asked not to discuss the details of the study with other participants. Finally, the participants were granted their course credit and dismissed.

Input Variables

Situational variable. The situational variable of the General Aggression Model was represented by television exposure. The television exposure variable had two levels: sitcom ($n = 102$) and crime drama ($n = 87$). The sitcom exposure group viewed an entire episode of the FOX sitcom *Titus* (21 minutes and 47 seconds) that had the commercials deleted. To control for differences due to program length, the drama exposure group viewed an episode of the ABC crime drama *NYPD Blue* (21 minutes and 33 seconds) that had been edited for both content and commercials. The portions of *NYPD Blue* seen by participants followed one storyline. The sitcom and crime drama each contained four scenes that included some form of physical violence. For example, both *Titus* and *NYPD Blue* featured a scene in which a female character slapped a male character in the face.

Personological variable. The personological variable of the General Aggression Model was represented by participants' trait verbal aggressiveness, which was assessed by the 20-item Verbal Aggressiveness Scale (Infante & Wigley, 1986). Although recent research has suggested that the 20-item scale may not be unidimensional, but may instead assess two separate factors (Beatty, Rudd, & Valencic, 1999; Chory-Assad, 2002), the present study used all 20 items to remain consistent with past research. A sample item of the scale includes, "When individuals are very stubborn, I use insults to soften the stubbornness." Participants indicated their endorsement of items on a five-point Likert scale with responses ranging from strongly disagree to strongly agree. Higher scores represented a higher level of trait verbal aggressiveness. The standard item alpha of the scale was .86. Responses ranged from 1.15 to 4.15 ($M = 2.60$, $SD = .47$).

Internal State Variables

Cognitions. The cognitive internal state of the General Aggression Model was represented by the number of aggressive cognitive

responses participants produced during television exposure. To obtain the responses, a thought-listing task adapted from Cacioppo and Petty (1981), which has been used in prior studies on the effects of violent media on aggressive thoughts (e.g., Bushman & Geen, 1990), was used. The form used to record the cognitive responses contained instructions and several boxes on the front and back of one sheet of paper. Participants were told to write only one thought or idea per box. Thus, the participants unitized the thoughts for the coders.

One female and two male graduate students in a mass communication course who were blind to the experimental conditions and research questions coded the thought-listing responses. Each independent thought was classified as verbally aggressive or not. Drawing on Bushman's (1998) definition of aggression, a *verbally aggressive* cognitive response was one that had a hostile, injurious, or destructive connotation. Each thought that was classified as aggressive was categorized according to the type of verbal aggression it contained: *dislike* (participant expresses dislike, hate, or anger toward another), *maledictions* (wishing something bad happens to another), and attacks on one's *character*, *competence*, *physical appearance*, and *background* (Infante, et al., 1990; Infante & Wigley, 1986; Joy, Kimball, & Zabrack, 1986).

The coders were trained to recognize and classify verbally aggressive cognitive responses and practiced coding cognitive responses not contained in the final sample. To assess intercoder reliability, the coders classified 50 responses that were not used for practice coding or in analysis of the hypotheses. Using Potter and Levine-Donnerstein's (1999) adapted version of Cohen's kappa, interrater agreement among the coders in both classifying a statement as verbally aggressive or not and in categorizing aggressive statements according to type of verbal aggression was 83% with a kappa of .82. After this level of interrater reliability had been reached, the coders independently coded participants' responses to the thought-listing task.

The total number of cognitive responses generated among participants was 1,678 ($M = 8.88$, $SD = 3.08$) (14.6% aggressive, 85.4% non-aggressive). The mean number of aggressive responses was 1.30 ($SD = 1.33$) and the mean number of non-aggressive responses was 7.58 ($SD = 3.09$). Among the aggressive responses, 59.2% ($M = .77$, $SD = 1.10$) were character attacks, 21.6% ($M = .28$, $SD = .64$) were competence attacks, 10.2% ($M = .13$, $SD = .38$) were expressions of dislike, 6.5% ($M = .08$, $SD = .31$) were physical appearance attacks, and 2.4% ($M = .03$, $SD = .18$) were maledictions. No participant reported a background attack.

Affect. The affect internal state of the General Aggression Model was represented by participants' feelings toward the program they had viewed in the lab. Participants' evaluation of the programs viewed in the lab and the programs' characters was measured by eight self-report items. A sample item includes, "I really like watching *Titus* [or *NYPD Blue*]." Participants indicated their endorsement of items on a five-point Likert scale with responses ranging from strongly disagree to strongly agree. Higher scores represented a higher evaluation of the program and its characters. The standard item alpha of the scale was .90, with scores ranging from 1.00 to 4.88 and having a mean of 3.15 ($SD = .79$). Evaluations of *Titus* ranged from 1.00 to 4.88 with a mean of 3.29 ($SD = .77$) and evaluations of *NYPD Blue* ranged from 1.00 to 4.63 with a mean of 2.99 ($SD = .79$).

Arousal. The arousal internal state of the General Aggression Model was assessed by items adapted from Anderson et al.'s (1995) Perceived Arousal Scale. This measure contains seven adjectives reflecting high arousal and eight adjectives reflecting low arousal (which are reverse-scored). In the present study, each adjective was preceded by the phrase "I feel . . ." (e.g., "I feel active"). Participants were instructed to report the extent to which they agreed or disagreed with the statements on a five-point Likert scale with responses ranging from strongly disagree to strongly agree. Higher scores represented higher arousal. The adjectives "depressed," "dull," "forceful," and "sharp" were deleted from the scale to increase its reliability. The standard item alpha of the scale was .88. Responses ranged from 1.27 to 4.82 ($M = 2.97$, $SD = .68$).

Results

The first hypothesis predicted that television sitcom exposure would produce a statistically significant number of aggressive cognitive responses. Participants in the sitcom condition produced 893 thoughts ($M = 8.75$, $SD = 3.15$). The mean number of aggressive cognitive responses was 1.41 ($SD = 1.49$). A one sample t -test, with a test value of 0, was conducted to test the hypothesis. The test value was set at 0 to determine whether participants actually produced any aggressive cognitive responses or if they produced a number that was statistically equivalent to zero. Results indicated that participants did produce a statistically significant number of aggressive cognitive responses during sitcom exposure, $t(101) = 9.56$, $p < .05$. The first hypothesis was supported. While the mean number of aggressive cognitive responses produced during sitcom exposure was 1.41, the mean number of non-aggressive cognitive responses was 7.34 ($SD = 3.05$). Therefore, about 16% of the cognitive responses to the sitcom were aggressive in nature. A paired-samples t -test indicated that participants in the sitcom con-

dition reported thinking significantly more non-aggressive than aggressive cognitive responses, $t(101) = -16.54, p < .05$.

The second hypothesis predicted that character attacks would be the most common type of aggressive cognitive response produced during sitcom exposure, followed by competence attacks. Of the 144 aggressive cognitive responses participants recalled having during the sitcom exposure, 61% ($M = .86, SD = 1.26$) were character attacks, 24.3% ($M = .34, SD = .72$) were competence attacks, 6.3% ($M = .09, SD = .32$) were expressions of dislike, 6.3% ($M = .09, SD = .32$) were physical appearance attacks, and 2.1% ($M = .03, SD = .17$) were maledictions. A one-variable chi-square test indicated that the aggressive cognitive responses were not evenly distributed across the five categories, $\chi^2(4) = 173.33, p < .05$. Subsequent paired samples t -tests were conducted. Because of the number of comparisons being made, the Bonferroni test of significance, in which the per comparison error (alpha) is adjusted to control the cumulative type I (familywise) error rate (Keppel, 1991), was applied. Using a corrected alpha of .01, results showed that character attacks occurred more frequently than all other aggressive cognitive response types. Character attacks occurred more often than competence attacks, $t(101) = 3.54, p < .01$; physical appearance attacks, $t(101) = 6.11, p < .01$; expressions of dislike, $t(101) = 6.03, p < .01$; and maledictions, $t(101) = 6.60, p < .01$. In addition, competence attacks occurred more frequently than expressions of dislike, $t(101) = 3.20, p < .01$; physical appearance, $t(101) = 3.15, p < .01$; and maledictions, $t(101) = 4.26, p < .01$. The second hypothesis was confirmed.

The third hypothesis posited that when controlling for liking the program viewed in the lab and perceived arousal, the television exposure condition would predict the number of aggressive cognitive responses, with exposure to the crime drama being associated with more aggressive cognitive responses than would exposure to the sitcom. The fourth hypothesis posited that when controlling for liking the program viewed in the lab and perceived arousal, trait verbal aggressiveness would positively predict the number of aggressive cognitive responses produced during television exposure. The fifth hypothesis predicted that when controlling for liking the program viewed in the lab and perceived arousal, the interaction of the television exposure condition and trait verbal aggressiveness would predict the number of aggressive cognitive responses, with trait verbal aggressiveness being a stronger predictor of the number of aggressive cognitive responses produced during sitcom exposure than it would during crime drama exposure.

These three hypotheses were examined by one multiple regression analysis with liking the program viewed in the lab and perceived arousal entered into the model in the first block, followed by the individual input variables of television exposure condition (hypothesis

three) and trait verbal aggressiveness (hypothesis four) entered in the second block, which was followed by the interaction between the input variables (hypothesis five) entered in the third block. The television exposure condition was coded "1" for sitcom exposure and "2" for crime drama exposure. The criterion variable was the number of aggressive cognitive responses reported.

Results of the regression analysis indicate that the first block of variables predicted the number of aggressive responses reported at a level of marginal statistical significance, $R = .16$, $R^2 = .03$, $p = .10$; $F(2, 183) = 2.36$, $p = .10$. Liking the program was a statistically significant predictor of aggressive responses ($\beta = -.16$, $p < .05$), while arousal was not ($\beta = .04$, $p = .59$).

The addition of the second block, which contained the television exposure condition and trait verbal aggressiveness variables, did not improve the ability of the model to predict aggressive responses, $R = .21$, $\Delta R^2 = .02$, $p = .15$, though the model as a whole did predict aggressive responses at a level of marginal statistical significance, $F(4, 181) = 2.15$, $p = .08$. When this second block of variables was entered into the model, liking the program viewed in the lab predicted aggressive responses at statistically significant level ($\beta = -.19$, $p < .05$) and the television exposure condition predicted aggressive responses at a level of marginal significance ($\beta = -.13$, $p = .09$). Arousal ($\beta = .04$, $p = .62$) and trait verbal aggressiveness ($\beta = .06$, $p = .39$) did not predict aggressive responses. Regarding the third hypothesis, the results suggest that television sitcom exposure is associated with more aggressive cognitive responses than is television crime drama exposure. This interpretation is tentative, however, given the marginal level of statistical significance ($p = .09$) for the television exposure variable. The third hypothesis was not supported. The fourth hypothesis was not supported, either, as trait verbal aggressiveness did not predict the number of aggressive cognitive responses participants recalled having during television exposure.

The addition of the third block, which was made up of the interaction term for television exposure condition and trait verbal aggressiveness, improved the ability of the regression model to predict aggressive cognitive responses at a statistically significant level, $R = .27$, $\Delta R^2 = .03$, $p < .05$; $F(5, 180) = 2.91$, $p < .05$. The interaction between television exposure condition and trait verbal aggressiveness ($\beta = -.17$, $p < .05$) and liking the program viewed in the lab ($\beta = -.19$, $p < .05$) were statistically significant predictors of aggressive cognitive responses, while the individual television exposure variable predicted the criterion variable at a level of marginal statistical significance ($\beta = -.13$, $p = .08$). Arousal ($\beta = .02$, $p = .75$) and trait verbal aggressiveness ($\beta = .07$, $p = .31$) did not predict the number of aggressive cognitive responses generated. In sum, the regression model with all three blocks of variables entered accounted for 8% of the

variance in the number of aggressive cognitive responses reported during television exposure.

To decompose the effect of the interaction term for television exposure condition and trait verbal aggressiveness on aggressive cognitive responses, the unstandardized regression coefficients were tested for the significance of their difference, as recommended by Baron and Kenny (1986), using a test provided by Cohen and Cohen (1983, p. 56). Results indicate that the difference between the two coefficients was statistically significant, $t(187) = 13.44, p < .01$. Trait verbal aggressiveness's unstandardized regression coefficient was statistically significant for the sitcom sample ($B = .66, p < .05$), but was not for the crime drama sample ($B = -.28, p = .27$). These results suggest that for participants in the sitcom sample trait verbal aggressiveness predicted the number of aggressive cognitive responses they recalled having, but for participants in the crime drama sample trait verbal aggressiveness did not predict aggressive cognitive responses. The fifth hypothesis was confirmed.

Discussion

The goal of the present research was to investigate the effects of exposure to television sitcom verbal aggression on aggressive cognitive responses using the framework provided by Anderson and Bushman's (2002) General Aggression Model. The results of the present study indicated that during exposure to a television sitcom, a genre that features a great deal of verbal aggression (*National television violence study, 1997, 1998; Potter & Warren, 1998*), 16% of the thoughts that participants recalled having were aggressive in nature. The mean number of aggressive cognitive responses participants recalled having during sitcom exposure was also significantly greater than zero. Furthermore, as predicted, the majority of these aggressive thoughts were character attacks, followed by competence attacks. Results also indicated that when controlling for affect and arousal, sitcom viewers tended to recall that they produced marginally more aggressive cognitive responses than did viewers of a crime drama and viewers' trait verbal aggressiveness and the television exposure condition interacted to predict aggressive cognitions. Subsequent analyses showed that trait verbal aggressiveness predicted the number of aggressive cognitive responses participants recalled having during sitcom exposure, but not during crime drama exposure.

Theoretical Implications

Over the last 40 years, the central question framing the controversy over media violence effects has concerned the mechanisms by which exposure influences aggressive behavior (Sparks & Sparks, 2002). The

General Aggression Model suggests that personality and media violence combine to affect aggressive behavior through their influence on individuals' internal cognitive, affective, and arousal states. The present study applies this model to a new area, the examination of effects of exposure to verbally aggressive television humor. The results of the present study are generally consistent with the model in that the input variables interacted to affect aggressive cognitions. Furthermore, the finding that the two most common types of verbal aggression found on sitcoms were also the two most frequently reported aggressive response types is consistent with the notion of spreading activation. These results provide support for the General Aggression Model and spreading activation in a new area of study, further establishing their validity as a useful model and process, respectively, for explaining media effects.

The results concerning trait verbal aggressiveness's ability to predict aggressive cognitive responses during sitcom, but not crime drama, exposure are also in line with prior theorizing. Recall that Bushman and Geen (1990) observed that individual differences had their strongest effects on aggressive thoughts during moderate media violence. They suggested that this result may have been obtained because personality influences encoding under conditions of stimulus ambiguity. They recommended future research address this possibility. The present study did address this possibility by examining trait verbal aggressiveness's predictive strength during exposure to another ambiguous media type, the verbally aggressive sitcom. Results confirmed Bushman and Geen's prediction.

Although the results observed here appear consistent with the General Aggression Model, the cognitive-neoassociationistic perspective, and work on priming, they appear somewhat inconsistent with Potter and Warren's (1998) suggestion that viewers use unitized schemas when processing comedy narratives and Potter and Smith's (2000) suggestion that non-graphic aggression may activate non-aggressive schemas. Although Potter and Smith's suggestion was made in the context of [non]graphic physical aggression, it is not implausible to consider that verbal aggression, which is non-graphic in the visual sense, would also be covered by their suggestion. The unitized schema perspective implies that verbal aggression in sitcoms should not be perceived and therefore, may not affect the accessibility of aggressive mental constructs. The accessibility of aggressive mental constructs and schema do, however, seem to have been at least partially affected by the verbal aggression found in the sitcom in the present study, as 16% of the thoughts participants recalled having during exposure were aggressive in nature, and participants who viewed the sitcom recalled having slightly more aggressive thoughts than did those who viewed the crime drama.

The results of the present study also suggest that Chory-Assad and Tamborini's (2001) failure to find a significant difference between participants' verbal aggression after exposure to varying levels of sitcom verbal aggression may be due to small sample sizes and other methodological problems they report. In contrast, the present study's results are not in agreement with Chory-Assad and Tamborini's (in press) finding that self-reported sitcom exposure was negatively associated with participants' verbally aggressive behavior. The difference between the present study's findings and those of Chory-Assad and Tamborini (in press) suggests a potential difference in the short- versus long-term effects of sitcom exposure. It is possible that while viewing the sitcom, participants think verbally aggressive thoughts, but after exposure, they are actually more pleasant, less aggressive individuals. Considering that sitcoms are geared toward making viewers laugh and tend to end on a positive, humorous note, it is not inconceivable to imagine that the end result of sitcom exposure is a low level of aggressiveness among viewers. Future research could examine this issue by assessing cognitive responses throughout and after sitcom exposure.

Practical Implications

Although the finding that exposure to a sitcom resulted in marginally more verbally aggressive cognitive responses than did exposure to a crime drama does not demonstrate the absolute harm of sitcom exposure, it does point to its relative harm when one considers the long-held belief that exposure to portrayals found in crime dramas may affect viewers' aggressiveness (e.g., Gerbner & Gross, 1976; Reith, 1999; Scharrer, 2001). The present study's findings imply that exposure to such programming may be equally, or perhaps even more, harmful than exposure to drama. When one also considers Potter's (1997, 1999) suggestion that television exposure to less serious forms of violence, such as verbal aggression, may pose the greatest risk to viewers because the inhibitions associated with verbal aggression are much lower than the inhibitions associated with performing physical aggression, the implications of the present research become even more important.

In addition to the importance of results indicating that sitcom exposure was associated with slightly more aggressive responses than was crime drama exposure, the finding that character attacks occurred most frequently after television exposure is of practical importance as this may be the most harmful of all verbal aggression types. For example, Infante et al. (1990) found that wives' use of character attacks and wives' reports of their husbands' use of character attacks distinguished abusive from non-abusive relationships. It is important to note, however, that descriptions of verbal aggression use alone made it somewhat difficult to distinguish between abusive and non-abusive relationships in this study. As such, Infante et al. suggest that there is

variability in the role that verbal aggression plays in the communication behavior of spouses in abusive relationships. Infante et al. (1989) suggest that verbal aggression is likely to be associated with physical aggression in marriages when both spouses are unskilled arguers (which increases the probability that verbal aggression will occur) and at least one spouse has a latent hostile disposition due to undissipated anger from societal, personal, and situational sources. In this case, verbal aggression can trigger abuse. If exposure to television sitcoms generates thoughts of character attacks, and individuals are less inhibited about enacting verbal (as opposed to physical) aggression, as Potter (1997, 1999) suggests, then sitcom exposure may be linked with particularly troublesome outcomes. As such, continued attention to this potentially serious effect of sitcom exposure is warranted.

Although the current study's findings are provocative and appear to offer avenues for future research, a few limitations to the study should be noted. First, the General Aggression Model-based model explained only 8% of the variance in aggressive cognitive responses. While at first glance this may seem to limit the value of the present study, it is important to remember that exposure to media violence (likely to be exposure to media physical violence) usually accounts for only 10–15% of the variance in the dependent variable (Sparks & Sparks, 2002). Second, cognitive responses were assessed after exposure to only one example of each genre. It is possible that the particular programs or episodes viewed may be responsible for the results observed here. Although research on the priming effects of exposure to physical violence has employed only one episode or one film/television clip to represent one level of the media exposure variable (e.g., Bushman, 1998; Josephson, 1987; Potter, et al., 2002), more reliable evidence is likely to be obtained by exposing participants to a variety of sitcoms and comparing their cognitive responses across sitcoms. A third limitation is the relatively homogeneous group of participants. Although a student sample may be appropriate for early stages of research, sampling a more diverse group of individuals may lend further insight into the cognitive processing of sitcom aggression. Finally, this study was exploratory in nature, and although the results appear to be consistent with certain theories and explanations, additional research should be conducted before any definitive conclusions on the topic may be reached.

The present study is an early endeavor at investigating a topic that is increasingly gaining the attention of communication scholars and other individuals concerned with the causes and prevention of aggressive behaviors. The results of this study suggest that exposure to verbal aggression that occurs in a humorous context may impact viewers' subsequent aggressive responses. Continued research on the effects of exposure to sitcom verbal aggression is important if we are to

understand the nature of these effects and the processes involved in their formation.

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