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TELEVISED SPORTS AND GAM: AN EXTENTION OF THE GENERAL AGGRESSION MODEL

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TELEVISED SPORTS AND GAM: AN EXTENTION OF THE GENERAL AGGRESSION MODEL

By

David Keith Westerman

A THESIS

Submitted to Michigan State University In partial fulfillment of the requirement For the degree of

MASTER OF ARTS

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ABSTRACT

TELEVISED SPORTS AND GAM: AN EXTENTION OF THE GENERAL AGGRESSION MODEL

By

David Keith Westerman

Previous research attempting to answer the question of why exposure to media violence leads to subsequent aggression has led to the formation of the General Aggression Model (GAM) (Anderson & Bushman, 2002a). This paper attempts to extend the findings of the GAM by testing it using televised sports. More specifically, it examines the effects that violent sports have on the formation of a hostile expectancy bias, as tested previously with video games (Bushman & Anderson, 2002). It also examines the impact of the scripted nature of the sport on this relationship, as differentiated previously by Depalma and Raney (2002).

One hundred and thirty-nine undergraduates from an introductory communication course participated in this study. Participants were exposed to one of four sports clips: scripted violent (professional wrestling), scripted non-violent (pair's figure skating), nonscripted violent (boxing), or non-scripted non-violent (baseball). After exposure, each subject was given three incomplete story stems to complete (as used by Bushman & Anderson, 2002), as well as a series of other questionnaires. The data were consistent with the hypothesis that violent sports lead to a greater formation of a hostile expectancy bias than nonviolent sports, and the scripted nature of the sport was found to moderate the relationship. The robustness of these relationships is also discussed. Limitations and implications of the study are then discussed, as are suggestions for future research.

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INTRODUCTION

Although the question of whether or not exposure to violent media makes people more aggressive may be unresolved in the public's eye, among some in the scientific community, it has been answered affirmatively (Bushman & Anderson, 2001a). Recent efforts to explicate processes thought to govern this effect have resulted in the formation of the General Aggression Model (GAM) (Anderson & Bushman, 2002a). GAM suggests that exposure to violent media alters internal processes related to hostility that govern audience behaviors, and results in aggressive outcomes. Support for the model has been found in studies using fictional content conventionally studied in media research including violent film (Anderson, 1997) and video games (Anderson & Dill, 2000, Bushman & Anderson, 2002). While valuable within this limited context, the application of GAM to non-fictional media holds value not only for its capacity to show broad relevance, but also for its potential to identify variables that might moderate the model's use. This paper extends the use of GAM to televised sports violence and attempts to determine the extent to which the scripted or unscripted nature of televised sports violence moderates the outcome of GAM processes after controlling for trait aggression, viewer enjoyment, and several other potential competitor variables.

The General Aggression Model

Anderson and his colleagues (Anderson, 1997; Anderson, Anderson, Dill, & Deuser, 1998; Anderson, Deuser, & DeNerve, 1995; Anderson, Anderson, & Deuser, 1996; Anderson & Dill, 2000; Bushman & Anderson, 2001b; Lindsey & Anderson, 2000) have developed and constantly refined a model of human aggression called the General Aggression Model (GAM). The most recent version of GAM (Anderson & Bushman,

2002a) integrates five overlapping domain specific theories including: Berkowitz's cognitive neoassociation theory (Berkowitz, 1990), social learning theory (Bandura, 2001), script theory (Huesmann, 1998; Schank & Abelson, 1977), excitation transfer theory (Zillmann, 1983), and social interaction theory (Tedeschi & Felson, 1994).

The model explains human aggression as a process involving a series of routes connecting cognitive inputs and several aggression related outcomes. Inputs are made up of variables related to both the person and situation. A variety of characteristics of a person or their situation are said to influence an outcome by changing the person's internal states. This internal change takes place through one or more of three routes: cognition, affect, or arousal, and leads to an immediate appraisal of the situation at hand. If there are insufficient resources to appraise the situation or the outcome is not important, an impulsive action will be enacted to respond to the input variable. If the outcome is important, a reappraisal process will occur and re-occur until a thoughtful action is enacted. In this manner, GAM suggests that aggression occurs because personal traits and situational variables interact to create a change in the present internal state of a person, which then causes the person to appraise the situation and decide on a course of action to take to deal with the present state.

The predictions of GAM have been supported in tests using several different situation and person inputs, including pain, (e.g., Anderson, Anderson, Dill, & Deuser, 1998), heat (e.g., Andserson, Deuser, & DeNeve, 1995), pictures of weapons (e.g., Anderson, Anderson, & Deuser, 1996), and trait aggression (e.g., Dill, Anderson, Anderson, & Deuser, 1997). Of particular interest here are studies using different forms of violent media like video games (Anderson & Dill, 2000; Bushman & Anderson, 2002)

and film (Anderson, 1997). These studies show GAM is applicable to several areas of narrative fictional media violence; however, the question remains as to whether or not GAM applies to other violent media forms.

GAM and Media Violence

Anderson (1997) tested GAM using violent film as a situational variable and trait aggression as a personal variable. He found that participants exposed to a violent film clip (from Karate Kid III) expressed greater affective hostility, as measured by a state hostility questionnaire, than those exposed to an equally arousing, but non-violent clip (from Gorillas in the Mist). Surprisingly, no significant difference was found for cognitive hostility, as measured by a word reaction time activity. A second study found that exposure to a violent film clip does lead to an increase in aggressive thoughts, but only for people low in trait hostility.

In two studies on video games, Anderson and Dill (2000) found evidence that violent video games also can impact internal states related to aggression. In the first study, they demonstrated that playing a violent video game leads to faster recognition of hostile words than playing a non-violent game. Consistent with GAM, this evidence suggests that the violent video games can act to prime hostility and produce a change in present internal states through routes of cognition. The second study produced similar results with behavioral outcome indicators. Anderson and Dill (2000) measured aggression by recording the intensity and length of a noise blast participants attempted to deliver to opponents in a competitive reaction time task. In the experiment, if the subject lost, their opponent was able to give them a noise blast of variable intensity and length. In turn, if they won, they determined the intensity and length of a noise blast delivered in

return. In reality, there was no actual opponent; participants were simply told they had lost on different trials, and a computer randomly generated the duration and intensity of the noise blast. The researchers theorized that the combination of both the priming of aggression through video games use and the immediate provocation of the noise blast from the supposed opponent would be necessary to increase participants' aggression levels. Consistent with this belief, they found that after trials where the subject supposedly won, there was no difference in aggression based on video game condition. However, in trials after the subject supposedly lost, there were main effects showing that both violent video game use and trait irritability facilitated aggressive response. All of these results are consistent with what would be predicted by GAM.

In another study using video games, Bushman and Anderson (2002) tested the impact of violent video games on the creation of a hostile-expectancy bias, or the tendency to believe that others will react to potential conflicts in an aggressive manner. In research asking participants to write the end to incomplete story-stems, they found that participants playing a violent video game predicted that characters in these story stems would behave more aggressively in responses to the circumstances presented in the story than those who played a non-violent game. This is consistent with GAM predictions suggesting that hostile situational cues (e.g., the video game violence) result in differential outcomes (e.g., a hostile expectancy bias).

These studies on film and video games show that GAM can be an effective model to help explain how some forms of media violence impact aggression. While it is reasonable to expect that other forms of media violence should follow similar patterns, it is possible that additional features of these media violence forms might moderate the

manner in which they work within the model. One feature of violence closely studied in media studies but not yet considered by GAM researchers is the fictional nature of media violence. Of particular interest in this study is the fictional or realistic representation of violence in mediated sports, a feature that Depalma and Raney (2002) distinguish as scripted or unscripted sports violence.

Research on Media Violence

Questions concerning the effect of exposure to violent media on subsequent aggression are as old as violent media. While historically this issue has been the concern of social critics, over the last fifty years, considerable empirical research has focused on the outcomes from exposure to television and other forms of media violence. Although the effects of media violence on aggression may still be debated in the public arena, scientific evidence clearly shows that the two are positively linked. Meta-analysis of scientific studies on media-related aggression shows that the average correlation between violent media and aggressive behavior is around .20 (Bushman & Anderson, 2001a). Evidence shows violent media related to aggression across research using multiple methods of measurement, across longitudinal and cross-sectional studies, and across field and lab settings. Subsequent meta-analyses of all these types of research show a positive relationship between exposure to violent media and subsequent aggression (Anderson & Bushman, 2002b).

Although the research included in meta-analytic research contains over two hundred different studies involving over 50,000 participants (Anderson & Bushman, 2002b), few studies have looked at the effect of televised sports violent on subsequent aggression. The little research that does exist suggests that violent sports, like other

violent media, lead to increased aggression; however, the exact nature of that relationship in terms of GAM processes remains decidedly unclear.

Televised Sports and Aggression

Given the great popularity of televised sports, it is surprising that more research has not focused on the effect of viewing mediated sports violence. This popularity is most obvious on cable television, where several cable networks are dedicated solely to providing 24 hour-a-day coverage of sports programming (e.g., ESPN, ESPN2, Fox Sports, etc.), but the popularity of mediated sports is not just a cable phenomenon. In 1998, over one-third of all programming on broadcast network television was devoted to sports (Nielsen Media Research, 1998). A common week of Nielsen TV ratings today shows broadcast sports often earning ratings in the two's and three's, signifying that millions of people are watching ("Nielsen Sports TV Ratings", 2003; "Top 10 US Television Sports Programs", 2003). In all, sports appear ubiquitous on television. People continue to watch and fuel continued broadcasting. The sheer amount of exposure demonstrates the need to learn more about the impact of watching televised sports.

The few studies that examine the effects viewing violent sports suggest that exposure impacts subsequent aggression. For example, experimental studies have found that viewing a violent sports clip can increase aggressive mood (Celozzi, Kazelskis, & Gutsch, 1981; Russell, Di Lullo, & DiLullo, 1988) and aggressive behavior among angered participants (Russell, Di Lullo, & Di Lullo, 1988). In cross-sectional correlation research, Brown, Sumner, and Nocera (2002) found that viewing contact sports predicted men's sexual aggression toward women. Similarly, using time series analysis, Philips (1983) linked exposure to televised boxing matches with an increase in national homicide

rates. Thus, existing evidence links aggression with exposure to televised sports violence. Yet the research in this area is scattered and not based on any coherent model. As such, little is known about the processes that govern the link between televised sports violence and outcomes that should be expected. The extension of GAM to this area of media violence is one way to advance understanding here.

Logic suggests that the processes governing exposure to other forms of media violence are related to those governing televised sports violence. As such, outcomes from exposure to televised sports violence should mirror those found with other research on the GAM. For example, research on GAM using video games as a situational variable found that violent games increased the hostile expectancy bias found in users (Anderson & Bushman, 2002). If I extend the GAM to sports, I might expect televised sports violence to act as a situational variable that produces a hostile expectancy bias.

Based on GAM and the findings of previous research on exposure to violent sports, the first hypothesis of this paper is offered:

H1: Exposure to a violent sports clip will lead to a greater hostile expectancy bias than exposure to a non-violent sports clip.

"Scripted" vs. "Unscripted" Sports. Depalma and Raney (2002) note that the terms "sports violence" and "aggressive sports" are catch-all phrases that fail to distinguish violence not only in terms of the level portrayed, but also in terms of several important contextual features known to play a part in moderating the effect of exposure. While contextual features like the motive for violent acts, their associated rewards, the graphicness of their portrayal, and their realism are generally held to heighten exposure's effect (Wilson, Kunkel, Linz, Potter, Donnerstein, Smith, et al., 1997), research on sports

violence fails to consider these features. Depalma and Raney (2002) herald the need for a more sophisticated definition of mediated sports violence that considers the type of contextual features known to moderate its impact. In particular they discuss the realism of sports violence, a feature they distinguish along lines associated with the "scripted" or "unscripted" portrayal of violence in sporting events. Based on evidence showing that presentational features of violence related to its characterization as real versus fictional can alter its impact on subsequent aggression (Potter, 1997, 1999), they argue that the scripted nature of sports violence is an important moderating feature governing the impact of its exposure. In research comparing the enjoyment of watching "scripted" (professional wrestling) and "unscripted" (boxing) sports, they found that enjoyment and mood were influenced by this contextual feature. People watching a scripted sports clip enjoyed it less and were in a worse mood after exposure, especially females.

While Depalma and Raney (2002) make no claims concerning the manner in which the scripted or unscripted characteristics of violent sports relate to aggressive outcomes, it seems logical to assume that they might. In arguing that realism and other contextual features are as relevant to outcomes from sports violence as they are to outcomes from media violence in general, Depalma and Raney (2002) lay the foundation for extending the logic associated with these moderators to similar contextual features of violent sports media associated with its scripted or unscripted nature. One might argue that the unscripted nature of some sport violence (or violence in general) might account for increased aggression known to result from realism in portrayals of media violence. If research on scripting was found consistent with earlier studies on realism, it might

suggest that the unscripted (and, thus somewhat less predictable) nature of realistic violence in media is responsible, at least in part, for its increased impact on aggression.

In order to better understand this possibility, clear explication of what is meant by "scripted" and "unscripted" violence in sports is necessary. Depalma and Raney (2002) formally define the two in a simple form as follows: "unscripted sports aggression refers to presentations of violence that naturally occur in the course of the traditional aggressive sports" (p. 5), while "scripted sports aggression, on the other hand, will refer to the violent depictions found in the increasingly popular sports entertainment arena" (p. 5). In their discussion of these differences, however, they distinguish between the two by considering the utility of violence in different sports. They argue that violence and aggression are encouraged in some sports while they are prohibited in others, and that this differentiates the role of violence in various sports. Unscripted sports like football, boxing, and hockey encourage aggression, and understand it as part of an "instinctual competitive drive" necessary for the participant to perform his or her best. By contrast, instead of encouraging aggression, scripted sports like inline roller derby, Slamball, and professional wrestling mandate the use of violence. Here, the use of "excessive force or physical harm" is portrayed as a means to a successful end (i.e., winning or entertaining) by intentionally violating the rules. Though not stated directly, I might infer from this that the different roles for violence ascribed to scripted versus unscripted sports (i.e., instinctive competitive drive versus intentional exploitation of force) are typically (if not naturally) confounded with fictional and realistic forms of sport violence.

The present study focuses on scripted versus unscripted violence based not only on the logic extending the notion of realism, but also on empirical evidence by Depalma

and Raney (2002) showing the usefulness of this distinction in predicting affective outcomes form exposure to mediated sports violence. Consistent with the meanings represented in Depalma and Raney (2002) I define scripted sports violence in terms of function and intentionality.

For the present study, "scripted" sports violence will be defined as excessively forceful movements and actions choreographed ahead of time and intentionally performed in sporting events for the purpose of entertainment. In other words, the exact movements of the competing athletes are practiced before the actual competition, and the intentional exploitation of force is included in performance primarily for the approval of spectators. "Non-scripted" sports violence is defined as the instinctive use of excessively forceful movements and actions in a sporting event performed in an attempt to win the event or as a reaction to unplanned instigating actions occurring during the event. While some of these actions might have been practiced, the exact movements between combatants are not choreographed ahead of time. Notably missing from this definition is any requirement that violence must be represented as an intentional violation of rules performed to win the sporting event. While I do not doubt that this is a common feature in scripted sports violence, I consider scripted violence to include any rehearsed violence that intentionally exploits force for the approval of spectators.

Based on these definitions of "scripted" and "unscripted," the issue of how scripted violence moderates the impact of televised sport on the hostile expectancy bias is investigated. While the logic governing hypotheses in this investigation might suggest certain outcomes, conflicting findings in relevant literature make it difficult to offer specific hypotheses. If I equate "unscripted" sports violence with "realistic" violence,

evidence from research on exposure to realistic violence suggests that realism (i.e., unscripted violence) increases aggressive responses (Potter, 1997, 1999). However, in research comparing the enjoyment of exposure to "scripted" (professional wrestling) and "unscripted" (boxing) sports, Depalma and Raney (2002) found that people who viewed an unscripted violent sport exhibited less hostile responses. Specifically, they enjoyed it more and were in a better mood after exposure. Given findings that are seemingly inconsistent, research questions are appropriate for investigating the manner in which the scripted nature of sports is related to aggressive outcomes. The following research question is offered in this regard:

RQ1: Will differences in "scripted" vs. "unscripted" features of violence moderate the impact of sport violence on levels of hostile expectancy bias? Method

Overview

An experiment was designed with the intent of replicating and extending Bushman and Anderson's (2002) procedures for studying the impact of exposure to violent media on hostile expectancy bias. Their protocol using violent video games was applied to the study of violent television sports. Materials used to manipulate exposure to televised sports violence were pilot tested to for levels of violence and scriptedness. In the main experiment, respondents in a 2 X 2 factorial design watched one of four video clips varying sports violence (violent, non-violent) and scriptedness (scripted, nonscripted). The impact of several contextual factors including trait aggression and individual differences in the enjoyment of sports was measured in order to control for extraneous influence.

Participants

A sample of 139 undergraduate students enrolled in an introductory communication course at the same university took part in the experiment. The age of participants ranged from 18-40, with a mean age of 20.5. Of the 139, 70 (50.4%) were male, and 69 (49.6%) were female. The racial breakdown of the sample is as follows: Caucasian, 65.5%, African-American, 15.8%, Asian-American, 8.6%, Hispanic, 2.9%, Mixed, 2.2%, Other, 2.2%, Native American, 0.7%, and 2.2% did not report their race. Students received course credit in exchange for their voluntary participation.

Procedure

Participants were tested in groups of five to ten. They were told that they were taking part in an experiment to determine peoples' reactions to watching sports programming. Before beginning the study, participants were asked to give their consent by reading and signing an informed consent form (see Appendix A). After providing their consent, participants were randomly assigned to view a sports video clip that represented either the non-violent/non-scripted condition (baseball, N=31), the non-violent/scripted condition (pair's figure skating, N=34), the violent/non-scripted condition (boxing, N=35), or the violent/scripted condition (professional wrestling, N=39). The experimenter sat in the experimental room the whole time while the clip was showing providing a presence intended only to keep discussion during the clip to a minimum.

After watching the clip, participants completed three ambiguous story stems, used previously by Bushman and Anderson (2002). This served as the primary outcome measure in this study. Next they evaluated the video clip they saw on measures of enjoyment, arousal, perceived scriptedness and boredom used to control for effects due to

unintended differences in the experimental materials. Next, each participant answered a group of media use questions. Finally, they completed the Buss Perry Aggression Questionnaire (Buss & Perry, 1992), the Eysenck Personality Questionnaire-Revised (Eysenck, Eysenck, & Barrett, 1985) and several demographic measures used to control for extraneous variance due to individual differences. After filling out these measures, participants were debriefed (see Appendix B). For a more complete version of the experimental script, please see Appendix I.

Materials

Baseball, pair's figure skating, and professional wrestling were chosen to replicate the operational procedures used to define these three conditions in earlier research on scripted and violent sports (DePalma & Raney, 2002). The fourth condition, non-violent/scripted condition was added in order to fully cross scriptedness with violence. Pair's figure skating was selected to represent this condition because it was a non-violent and scripted (choreographed) sport that involved multiple participants, and thus matched the other conditions on this multiple-participant attribute. Each sports video clip was about twenty-minutes long without commercials. Several separate short clips from each genre were combined to create each 20-minute stimulus. The pro wrestling clips came from episodes of Monday Night Raw and Smackdown. The figure skating clips came from the Four Continents Championship and the 2002 Winter Olympics. The boxing clips come from recent bouts on Fox Sports. The baseball clips come from recent Major League Baseball games.

Before the main study was conducted, a pilot study was conduced to guarantee that the experimental materials varied on violence and scriptedness as intended. First, the

four video clips were checked for the number of violent acts each clip contained. The NTVS (Wilson et al., 1997) definition of a violent act was used for this purpose. A coder familiar with the definition watched each video and coded for the number of violent acts. The baseball and figure skating clip each contained no violent acts, the professional wrestling video contained 199 violent acts, and the boxing clip contained 522 violent acts. Chi-square tests demonstrate that there were significantly more aggressive acts in the violent/non-scripted condition than in the violent/scripted condition, χ^2 (1,

N=721)=144.7, *p*<.001.

Second, the video clips were pilot tested to make sure they varied on scriptedness as intended and to check for unintended differences on enjoyment, arousal, and boredom. The pretest measures for scriptedness as well as those for arousal and boredom were created specifically for this study. These measures appear in Appendix C. Similarity across levels of enjoyment was measured using a scale adapted from previous entertainment research (Depalma & Raney, 2002). This scale also appears in Appendix C.

A sample of 61 undergraduates from a large Midwestern University watched one of four video clips selected to represent the four conditions varying sports violence and scriptedness, and rated them on measures of scriptedness as well as on enjoyment, arousal, and boredom. None of the participants in the pilot sample took part in the main experiment. Of the 61 pilot participants, 18 viewed a baseball video clip (the nonviolent/non-scripted condition); 14 viewed figure skating (the non-violent/scripted condition); 15 viewed boxing (the violent/non-scripted condition); and 14 viewed professional wrestling (the violent/scripted condition).

A manipulation check performed using one-way between subjects ANOVA on the measure of scriptedness produced a significant effect, F(3,57) = 86.92, p<.001. Subsequent Newman-Keuls analyses provided evidence that the clips varied as intended. Both professional wrestling (M=4.38, SD=1.13) and figure skating (M=4.86, SD=.36) were perceived as more scripted than boxing (M=1.80, SD=.60) or baseball (M=1.41, SD=.67) at p<.05.

Additional ANOVA's on enjoyment, arousal, and boredom produced significant differences for enjoyment, F(3,57) = 7.80, p<.001, arousal, F(3,57) = 8.57, p<.001, and boredom, F(3,57) = 11.02, p<.001 (for means and standard deviations of these and other variables used in this study, please see Appendix L). Subsequent Newman-Keuls analyses demonstrated that boxing, professional wrestling and figure skating were perceived as more enjoyable, more arousing, and less boring than baseball at p<.05. Due to these observed differences, enjoyment, arousal, and boredom were included as control variables in the main study.

Outcome Measures.

The hostile expectancy bias outcome response was measured using procedures established by Bushman and Anderson (2002). Participants were provided with a set of three incomplete story stems about a car accident, persuading a friend, and going to a restaurant. Two matching versions of the story stems were created with either male or female characters. This was done to control for possible gender effects in the stories (see Appendix F). Participants were asked to read the story stem and then list up to 20 different things that they think the person in the story would do or say, think or feel. Seventy-two participants completed form A, and 67 completed form B.

Trained research assistants coded participant responses to the story stems for the number of total responses and the number of hostile responses. Using Bushman and Anderson's (2002) protocol, they independently tabulated the number of aggressive thoughts, behaviors and feelings subjects reported when completing the story stem (see Appendix G). Again, following Bushman and Anderson's procedures, the percentage of hostile response was computed for each participant to control for individual differences in the total number of responses provided by participants. Percentage of hostile response scores served as the outcome measure in all analyses.

Two steps were taken to examine the quality of the outcome measure. First, responses from the two coders were inspected to establish intercoder reliability. Each coder was given the story stems for the same 14 (out of 139) participants. The two coders had a 99.5% agreement rate on what was a response, coming up with a total of 440 responses. They had a 91.8% agreement rate on whether a response was hostile or not. Based on this evidence of high intercoder agreement, one coder was used to code the entire sample. Second, a one-way ANOVA was conducted to identify unintended differences in hostile response outcomes associated with forms A and B. Since there was no significant difference between forms A and B, F(1,137)=.169, *ns*, the two were combined in subsequent analyses.

Control Measures

The Revised Eysenck Personality Questionnaire (REPQ) was used to help control for the affects of personality (Eysenck, Eysenck & Barrett, 1985). The scale contains 48 forced-choice items with 12 statements measuring each of four personality "types" including extroversion, neuroticism, psychoticism, and social desirability. Participants

respond to each item in a yes or no manner. Scores are a count of the number of statements for which one chooses the designated response. The scale has proven reliable in several studies (e.g., Eysenck et al., 1985) and been demonstrated as a comparable alternative to the long form (Barrett & Eysenck, 1992). (see Appendix E).

Extroversion (e.g., "Do you like mixing with people?") is said to tap an individual's level of social adaptability. Neuroticism (e.g., "Do you suffer from "nerves?") involves an individual's level of anxiety, emotionality, and social isolation. Psychoticism items (e.g., "Have you ever cheated at a game?") assay an individual's inclination toward a "lack of restraint, responsibility, need for cognitive structure, and willingness to live by society's rules and mores (socialization)" (Zuckerman, Kuhlman, & Camac, 1988, p.104). Social desirability (e.g., "Are *all* your habits good and desirable ones?") measures an individual's likelihood to participate in acts that may be deemed socially inappropriate. Reliabilities of these subscales in this study were coefficient alpha equal .84, .85, .45, and .62, respectively.

The Buss-Perry Aggression Questionnaire (BPAQ) (Buss & Perry, 1992) was used to measure the effects of trait aggression. This questionnaire contains 29 standard Likert-type items that measure four subtraits of aggression: physical aggression (e.g., If somebody hits me, I hit back), verbal aggression (e.g., I can't help getting into arguments when people disagree with me), anger (Some of my friends think I'm a hothead), and hostility (At times I feel I have gotten a raw deal out of life). Buss and Perry (1992) found the BPAQ to have a coefficient alpha of .89 and a test-retest reliability of .80. They also demonstrated a significant relationship between peer reports of aggressiveness and higher scores on these four scales for male college students (see Appendix H).

Reliabilities for these subscales in this study were alpha equal .85, .76, .78, and .70, respectively

The demographic and media use measures included single item measures of age, sex, race and enjoyment of 12 different sports including soccer, basketball, baseball, golf, auto racing, hockey, football, figure skating, roller derby, boxing, tennis, and professional wrestling. Additional items measured the number of hours per week spent watching sports in general, watching each of the 12 sports specified above, visiting internet sports cites, listening to sports radio, reading sports books and magazines, and reading the sports pages in the newspaper. Acceptable reliability levels were not found for items measuring enjoyment of different sports, or for the enjoyment of different violent sports despite several attempts at dropping various combinations of items. Therefore, these items were not used in further analyses. The items measuring general sports media consumption (items 2, 4, 5, 6, 7) had a reliability of alpha equal .85, and were summed across to create a new variable called "sports media consumption" to be used as a control, in place of enjoyment of sports.

The same items used in the pilot test to measure boredom, arousal and enjoyment resulting from exposure to the video clips were included as measures to control for effects due to unintended differences in the experimental materials. Boredom (e.g., "The footage was boring") and arousal (e.g., "What I saw was exhilarating") were each measured using three five-point Likert-type response items. Enjoyment (e.g., "How much would you like to see the entire clip?") was measured with ten seven-point Likert-type response items. Reliabilities for these measures were .92, .90, and .94, respectively. Items for these scales are reported in Appendix C.

Results

In order to test the hypothesis and research question under consideration, both the total number of hostile responses and the percentage of hostile response scores were subjected to a 2 (violence/nonviolence) x 2 (scripted/unscripted) ANOVA. An additional analytical procedure known as "destructive testing" (Anderson & Anderson, 1996) was conducted also to test the robustness of the observed relationships.

The Main Effect of Sports Violence

Hypothesis one suggested that a greater hostile expectancy bias would be found following exposure to a violent sports clip than exposure to a non-violent sports clip. In line with this prediction, the 2 X 2 ANOVA on total hostile responses produced a significant main effect of violence, F(1,138) = 4.08, p < .01, eta squared= $.03^1$. Participants watching a violent sport reported a greater total number of hostile responses (M=6.97, SD=4.20) than those watching a non-violent sport (M=5.57, SD=3.64). Thus, the data is consistent with the hypothesis that watching a violent sport would lead to a greater hostile expectancy bias than watching a non-violent sport.

To help control for the effects of number of total responses (both hostile and nonhostile), another 2 X 2 ANOVA was run with percentage of hostile responses as the dependent variable. The 2 X 2 ANOVA on percentage of hostile response scores produced a significant main effect of violence, F(1,138) = 7.31, p<.01, eta squared = .05. Participants watching a violent sport reported a greater percentage of hostile responses (M=.23, SD=.13) than those watching a non-violent sport (M=.18, SD=.09). Thus, the data are again consistent with the hypothesis that watching a violent sport would lead to a greater hostile expectancy bias than watching a non-violent sport. After demonstrating the impact of the sports violence manipulation, the robustness of the main effect was examined using the destructive testing approach (Anderson & Anderson, 1996). In this approach, the predicted relationship is first tested. If it is found to exist, control variables are entered into a regression model to see if the relationship is broken. The goal of this test is to identify the strength of the relationship by determining how many control variables it can withstand before it breaks.

Toward this end, a block linear regression was performed on total hostile responses and then percentage of hostile responses adding a new set of control variables with each block until the relationship was no longer significant. The order of the blocks was determined by assumptions about which would be the strongest control variables. Thus, after violence was entered into the first block, the Buss-Perry subscales and the Eysenck subscales were entered into the second block, sports media consumption was entered into the third block, boredom was entered into the fourth block, arousal was entered into the fifth block, and enjoyment of the clip was entered into the sixth block. A linear regression was run to see at what point the relationships that were found previously break. This analysis showed that a significant main effect of violence on total hostile responses still existed up to the end of the last block, F(13,138)=2.26, p<.05. It also showed that the significant main effect of percentage of hostile responses still existed up to the end of the fifth block, F(12,138)=1.88, p<.05. Thus, the relationship between the violence of the clip and the number of hostile responses held even when adding all of the above control variables, and the relationship between violence and percentage of hostile responses held when adding all of the control variables except enjoyment of the clip.

The Moderating Effect of Scriptedness

Research question one asked if the scripted nature of sports would moderate effect of exposure to a violent sports clip on hostile expectancy bias. In this regard, results of the 2 X 2 ANOVA on total hostile responses showed no main effect of scriptedness, F(1,138)=.036, *ns*. The percentage of hostile response scores also produced no main effect of scriptedness, F(1,138)=.312, *ns*. No significant violence X scriptedness interaction was found for total hostile responses, F(1,138)=1.97, *ns*. However, a significant violence x scriptedness interaction was found for percentage of hostile responses, F(1,138) = 4.38, p < .05, eta squared = .03. Thus, the data show possible evidence of a moderator effect.

Subsequent Newman-Keuls test were conducted to inspect the interaction among the four conditions. These tests showed that percentage of hostile response scores in the violent/scripted condition were significantly higher than those in the non-violent/scripted condition. No other differences were observed. (See table 1).

Table 1.

Violence

Percentage of Hostile Responses by Condition

Sciptedness

Scripted

	-	-
	M=.20 _{ab}	<i>M</i> =.17 _a
Non-violent	<i>SD</i> =.11	<i>SD</i> =.07
Violent	$M=.21_{ab}$	<i>M</i> =.26 _b
Violent	<i>SD</i> =.10	<i>SD</i> =.15

Non-scripted

Note. Means that do not share the same subscripts differ at p < .05.

After examining the specific pattern represented by the interaction, destructive testing was again applied to test the robustness of the interaction. To test this relationship, violence, scriptedness and the interaction term for violence X scriptedness were entered into the first block. Variables entered into subsequent blocks followed the same sequence as described in tests on hypothesis 1. This analysis showed that a significant interaction effect on percentage of hostile responses still remained at the end of all the blocks, F(15,138)=1.91, p<.05. Thus, evidence of the moderator effect associated with the interaction effects was not broken by the destructive tests.

Furthermore, although a significant violence X scriptedness interaction was not found for total hostile responses, the pattern of means is similar to the pattern for percentage of hostile responses.

Table 2.

Total Number of Hostile Responses by Condition

Sciptedness

Violence	Non-scripted	Scripted
Non aisland	<i>M</i> =6.13	<i>M</i> =5.06
Non-violent	<i>SD</i> =4.29	<i>SD</i> =2.89
Violent	<i>M</i> =6.54	<i>M</i> =7.36
	<i>SD</i> =3.70	<i>SD</i> =4.62

Note. No means differ at p < .05.

Discussion

This study was designed to extend the General Aggression Model developed by Anderson and his colleagues (e.g., Anderson & Bushman, 2002a) by applying its logic to a type of content that has received limited attention, sports, and by considering other variables that may moderate any relationship found. Data were consistent with the first hypothesis that viewing violent sports would lead to a greater creation of the hostile expectancy bias among participants than viewing nonviolent sports. They also indicated that the scripted nature of sports moderated this effect. One interpretation of these data is that media violence may increase aggressive responses only if the violence is scripted. Support for this interpretation can be derived from the fact that participants in the violent/scripted condition had the highest mean percentage of hostile responses. Further support is found in the fact that the violent/non-scripted condition did not significantly differ from either non-violent condition. Thus it is possible that the conventionally accepted inducing effect of violent media on hostile reactions may occur only for "scripted" violence. Obviously, much more research needs to be done in this area before we can have the necessary confidence in this claim, but the findings here are consistent with this type of understanding. At the same time, the data are also consistent with the notion that scripted/non-violence actually produces less hostility, but the lack of a logical explanation for this interpretation makes it much less plausible.

This finding suggests something may be different between sports and fictional media. Although it is generally thought that media violence will increase aggressive responses resulting from exposure, perhaps this is not always the case in sports. The findings suggest that in sports media, violence per se may not be enough to increase a

hostile expectancy bias. Only when that violence was scripted was a significant increase found for the hostile expectancy bias. This suggests that sports may be processed and attended to differently than other forms of violent media. In this study, if the "nonscripted" boxing is equated with "realistic", the findings are in contrast with other findings from violent media, which generally find that realism increases aggressive outcomes (Potter, 1997, 1999). This implies that there may be something about the nature of sports and "realistic" sport violence that make it different from other forms of media violence. One possible difference is the mandated nature of the violence. In sports, a greater proportion of the violence that occurs is sanctioned by rules allowing the use of violence in pursuit of a goal; winning a game or match. Perhaps the sanction associated with "realistic" sports violence also acts to instill clear rules in viewers' minds concerning the social boundaries that delimit the use of hostility to certain arenas and prohibit it in others. Though the factors leading to these differences are not clear, reactions to the forms of scripted violence found in professional wrestling seem different. Notably, these reactions seem more in line with the effects observed in traditional media violence research – research usually conducted with the type of narrative fictional violence that might be called scripted. If this is the case, one might argue that the findings for wrestling mirror those found in most media entertainment research on violence and hostility. Under this interpretation the unique observation here is that nonscripted violence (specifically, mandated non-scripted violence) did not increase hostility. It is possible that this mandated nature of sports violence somehow causes realistic (or non-scripted) violence to cause less aggressive responses in viewers than fictitious (or scripted) violence. However, this is merely speculation, and much more research would

be needed in this area before claims can truly be made. Whatever the reasons behind this, the evidence supports the claim that realism works differentially for sports and other forms of mediated violence, and should be taken into account in future studies in this area.

There are several possible limitations to this study. One is the adequacy of the measurement used. Although most measures used were at least minimally adequate (alpha>.70), both the psychoticism (alpha=.45) and social desirability (alpha=.62) subscales of the Eysenck questionnaire fell below this level. Especially troublesome is the psychoticism scale, which is known to be an important potential control variable for effects of watching violent media (Zillmann & Weaver, 1997). It is possible that better controls for these individual differences would have produced a different outcome in the destructive testing.

Another limitation of this study is the choice of sports for each condition. Only one sport was included in each of the four conditions. It is possible that each chosen sport contained aspects beyond those identified and controlled that produced the results found. For example, although efforts were made to equate clips of the different sports, verbal aggression is often more pervasive in professional wrestling telecasts than in other sports. In fact, it would be difficult, if not entirely impossible; to show a representative 20minute clip of professional wrestling that did not include verbal aggression. Thus, it is possible that verbal aggression is responsible for some of the heightened hostility found in the scripted/violent condition.

Related to this problem are concerns about the unknown impact of natural confounds associated with different forms of sports and violence. For example, while

differences in enjoyment, arousal and boredom across the four sports selected did not impact the outcomes of the present study; the pilot study showed that the clips differed considerably along these dimensions. The baseball clip was especially distinct, being far less enjoyable or arousing and the more boring than the other sports. It is possible that the baseball clip used here was unusual on these dimensions, but it is also possible that baseball is just different in these regards. It is a sport with constant breaks and rest times (unlike the other three used). Future studies in this area should consider using basketball or some other non-violent, non-scripted sport to see if this makes a difference. The constant action and motion common in basketball should make it more similar to other sports used here in terms of the arousal and boredom it creates.

Similar concerns stem from differences in enjoyment of the different clips used in this study. Low enjoyment of sports clips has been linked with negative states, like bad moods (DePalma & Raney, 2002). It is possible that these negative states could have a different impact on hostile expectancy bias. One problem with enjoyment levels in this study is the skewed distribution level of enjoyment. The median level of enjoyment overall is this study was only 2.90 and the mean was only 3.26 (SD=1.41) on a sevenpoint scale. This means that in general, the participants in the main study found the clips they saw less enjoyable than average. No doubt this was, in part, a function of the research setting. Still, it may be interesting to study the differential effects of watching enjoyable vs. unenjoyable clips of the same sport.

A conceptual problem with this study and research on sports and violence in general lies in our limited knowledge of characteristics that distinguish sports violence, and the lack of broadly shared definitions of attributes that distinguish different types of

sports. For example, under the definition of scripted sport used here, both figure skating and professional wrestling are classified the same. However, there are great differences between these two sports; besides the verbal aggression mentioned above. Along with being scripted, professional wrestling is staged with outcomes are predetermined. By contrast, while figure skating may be choreographed, the outcomes are not predetermined. Thus, more precise definitions are needed for "scripted" and other distinguishing attributes of media sport. Future research may also want to consider the role of scriptedness according to GAM logic by comparing movies and other forms of "scripted" television violence to sport violence. This could help differentiate between the scripted and unscripted nature of the violence, and may provide a better test of its effect. Clarification of this concept and other attributes that distinguish sports violence will not only help us to better understand aggressive response associated with mediated sports, but will give us greater insight on factors that govern the impact on viewer hostility that result from all forms of media violence.

Footnotes

¹Both dependent variables (total hostile responses and percentage of hostile responses) were also entered into a 2 (violence) X 2 (scriptedness) X 2 (gender) ANOVA. There were no significant main effects or interaction effects involving gender for total hostile responses or percentage of hostile responses. Thus, gender was not used as an independent variable.

Thank You

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Appendix A

Evaluating Televised Sports

CONSENT FORM

You are being asked to participate in a study conducted by the Department of Communication Michigan State University. This research is designed to help determine how you react to watching televised sporting events. You will watch a 20 minute clip of a televised sporting event and then be asked to fill answer some questions. The total time this should take is around 45 minutes.

Your participation in this study is completely voluntary. You may refuse to participate in any procedures or answer any questions you object to; you may also discontinue your participation at any time without penalty. Your privacy in this research will be protected to the maximum extent allowable by law.

If you have any questions or concerns about this study, please contact:

David Westerman Primary Investigator 355-5162 westerm4@msu.edu

If you have any questions regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact-anonymously, if you wish:

Ashir Kumar, M.D. Chair of the University Committee on Research Involving Human Subjects (517)-355-2180 <u>uchris@msu.edu</u> 202 Olds Hall East Lansing, MI 48824

Your signature below indicates your voluntary agreement to participate in this study.

Participant's Signature

Participant's Name (Please print clearly)

Date

Appendix B

Debriefing

After completing the final portion of the study, subjects will be verbally debriefed by the experimenter, who will read the following statement:

"Now that you have finished that portion, I have one more question to ask you. At any time during the study did you think you knew what the researcher was trying to test?"

The experimenter will give the subject a chance to respond, and then continue by saying:

"Thank you for participating in this study. Now before you go, I have one more thing that I need to tell you. In addition to what I have already told you about the purpose of this study, I would like you to know more about our interest in peoples' reactions to watching sports. We are specifically interested in knowing whether or not viewing different types of sporting events creates a hostile expectation bias in viewers. As such, we are looking to see if the manner in which people complete the incomplete story stem is influenced by watching different sporting events. We are sorry if this incomplete disclosure upsets you in any way. We would like to remind you that your name will not be connected with your responses, however, if you are disturbed by any of what has happened I will dispose of your responses now and it will not be included in any further part of our study."

The experimenter will give the subject a chance to respond, comply with the subject's request, and then continue by saying:

"Do you have any further questions about this study?"

The experimenter will answer any questions the subject may have, and then finish by saying:

"I would like to once again thank you for participating in this study. We ask that you do not discuss the details of this study with anyone other than me and the primary investigator. If you have any questions or concerns in the future, feel free to contact Dave Westerman, the primary investigator. His e-mail address is <u>westerm4@msu.edu</u>. Now, unless you have anything further, we are finished. Thank you for your time and have a great day."

Appendix C

Pilot-Test Items for Stimulus Material

To pretest the stimulus materials, the following scale was used to measure enjoyment (Depalma & Raney, 2003). This was filled out by participants after completing the incomplete story stems. Each item uses a 7-point scale from 1 ("not at all") to 7 ("extremely").

- 1. How exciting did you think the clip was?
- 2. How well-played was the action?
- 3. How high did you find the energy level of the clip?
- 4. How good was the footage?
- 5. How enjoyable did you think the commentating was?
- 6. How much did you like watching?
- 7. How entertaining did you find the clip?
- 8. How much would you like to see the entire clip?
- 9. How suspenseful was the clip you watched?
- 10. How much did you enjoy what you watched?

The following questions were also asked as part of the pilot test, as well as after the enjoyment questions in the major study. The first three questions measured arousal, the next three measure scriptedness, and the last three measure boredom. All nine were answered according to the following scale:

1--strongly disagree

2--disagree

- 3—neither agree nor disagree
- 4-agree
- 5-strongly agree
- 1. What I watched was exhilarating.
- 2. The clip I saw was exciting.
- 3. The action I watched was energizing.
- 4. It seemed like the actions were pre-planned.
- 5. I think what I saw was choreographed.
- 6. The action is this clip was probably rehearsed ahead of time
- 7. The clip I saw was interesting.
- 8. What I saw held my attention.
- 9. The footage was boring.

Appendix D

Media use and Demographic Items

- 1. How old are you?
- 2. Please circle your gender: Male Female

3. Please circle the choice that best describes your race:

Caucasian African-American Asian-American Hispanic Native American Mixed Other

- 1. On a scale from one to ten, where one means you do not enjoy at all and ten means you enjoy as much as you possibly could, how much do you enjoy each of the following sports?
 - a. Soccer
 - b. Basketball
 - c. Baseball
 - d. Golf
 - e. Auto Racing
 - f. Hockey

- g. Football
- h. Figure Skating
- i. Roller Derby
- j. Boxing
- k. Tennis
- 1. Professional Wrestling

For questions 2 through 7, please refer to the following scale

- 0-not at all
- 1-about 1 hour
- 2-about 2 hours
- 3-about 3 hours
- 4-about 4 hours
- 5—about 5 hours
- 6-more than 5 hours
 - 2. On average, how many hours a week do you watch sports?
 - 3. On average, how many hours a week do you watch each of the following sports?
 - a. Soccer
 - b. Basketball
 - c. Baseball
 - d. Golf
 - e. Auto Racing
 - f. Hockey

- g. Football
- h. Figure Skating
- i. Roller Derby
- j. Boxing
- k. Tennis
- 1. Professional Wrestling
- 4. On average, how many hours a week do you spend on the internet, looking at sports related sites?
- 5. On average, how many hours a week do you devote to reading books or magazines about sports?
- 6. On average, how many hours a week do you spend reading the sports page of the newspaper?

7. On average, how many hours a week do you listen to sports-related programming on the radio?

Appendix E

The Revised Eysenck Personality Questionnaire

Answer the following questions "yes" or "no". Circle the answer that represents how you feel.

1.	Does your mood often go up and down?	YES	NO
2.	Do you take much notice of what people think?	YES	NO
3.	Are you a talkative person?	YES	NO
4.	If you say you will do something, do you always		
	keep your promise no matter how inconvenient it might be?	YES	NO
5.	Do you ever feel "just miserable" for no reason?	YES	NO
6.	Would being in debt worry you?	YES	NO
7.	Are you rather lively?	YES	NO
8.	Were you ever greedy by helping yourself		
	to more than your share of anything?	YES	NO
9.	Are you an irritable person?	YES	NO
10.	Would you take drugs that may have strange or dangerous effects?	YES	NO
11.	Do you enjoy meeting new people?	YES	NO
12.	Have you ever blamed someone for doing something		
	you knew was really your fault?	YES	NO
13.	Are your feelings easily hurt?	YES	NO
14.	Do you prefer to go your own way rather than act by the rules?	YES	NO
15.	Can you usually let yourself go and enjoy yourself at a lively party?	YES	NO
16.	Are all your habits good and desirable ones?	YES	NO
17.	Do you often feel "fed-up"?	YES	NO
18.	Do good manners and cleanliness matter much to you?	YES	NO
19.	Do you usually take the initiative in making new friends?	YES	NO
20.	Have you ever taken anything (even a pin or button)		
	that belonged to someone else?	YES	NO
21.	Would you call yourself a nervous person?	YES	NO
22.	Do you think marriage is old-fashioned and should be done away with?	YES	NO
23.	Can you easily get some life into a rather dull party?	YES	NO
24.	Have you ever broken or lost something belonging to someone else?	YES	NO
25.	Are you a worrier?	YES	NO
26.	Do you enjoy cooperating with others?	YES	NO
27.	Do you tend to keep in the background on social occasions?	YES	NO
28.	Does it worry you if you know there are mistakes in your work?	YES	NO
29.	Have you ever said anything bad or nasty about anyone?	YES	NO
30.	Would you call yourself tense or "highly-strung?"	YES	NO
31.	Do you think people spend too much time		
	safeguarding their future with savings and insurance?	YES	NO
32.	Do you like mixing with people?	YES	NO
33.	As a child were you ever cheeky (talked back) to your parents?	YES	NO
34.	Do you worry too long after an embarrassing experience?	YES	NO
35.	Do you try not to be rude to people?	YES	NO
36.	Do you like plenty of bustle and excitement around you?	YES	NO
37.	Have you ever cheated at a game?	YES	NO
38.	Do you suffer from "nerves?"	YES	NO

39.	Would you like other people to be afraid of you?	YES	NO
40.	Have you ever taken advantage of someone?	YES	NO
41.	Are you mostly quiet when you are with other people?	YES	NO
42.	Do you often feel lonely?	YES	NO
43.	Is it better to follow society's rules than go your own way?	YES	NO
44.	Do other people think of you as being very lively?	YES	NO
45.	Do you always practice what you preach?	YES	NO
46.	Are you often troubled about feelings of guilt?	YES	NO
47.	Do you sometimes put off until tomorrow what you ought to do today?	YES	NO
48.	Can you get a party going?	YES	NO

Appendix F

Story Stems

Instructions: We would like you to do this story completion task. Don't spend too much time on this task. For each story, you only need to list 20 things in all, not 20 in each column. When you are done, please on to the next part of this questionnaire. (There were two versions of this form used in the study. The changes for form B are in parentheses).

THE CAR ACCIDENT

Todd (Jane) was on his (her) way home from work one evening when he (she) had to brake quickly for a yellow light. The person in the car behind him (her) must have thought Todd (Jane) was going to run the light because he (she) crashed into the back of Todd's (Jane's) car, causing a lot of damage to both vehicles. Fortunately, there were no injuries. Todd (Jane) got out of his (her) car and surveyed the damage. He (She) then walked over to the other car,

What happens next? List <u>20 things</u> that Todd (Jane) will do or say, think, and feel as the story continues.

PERSUADING A FRIEND

Janet (Mark) has worked all summer long, and now, a couple of weeks before school started, she (he) felt she (he) deserved a holiday. After a bit of thought, she (he) decided a vacation to the coast would be ideal. After all, what could be better than sun tanning and swimming in the ocean? The problem was that she (he) did not want to go alone. She (He) knew her (his) best friend Shannon (Shane) would go if she (he) could but Shannon (Shane) had been saving her (his) money to buy a new stereo. Janet (Mark) decided to go over to Shannon's (Shane's) place and try to convince her (him) to come to the coast.

What happens next? List <u>20 things</u> that Janet (Mark) will do or say, think, and feel as the story continues.

GOING TO A RESTAURANT

Jane (Todd) had worked hard all day long cleaning her (his) apartment. She (He) was tired but decided to reward herself (himself) with a meal in one of the restaurants down the street. Upon entering the restaurant, Jane (Todd) decided upon a Caesar salad, French onion soup, and filet mignon. Some 15 minutes later, a waiter (waitress) came around to take her (his) order. Time slowly passed and Jane (Todd) was getting hungrier and hungrier. Finally, about 45 minutes after her (his) order had been taken, Jane (Todd) was about to leave when she (he) saw the waiter (waitress) approaching with her (his) food.

What happens next? List <u>20 things</u> that Jane (Todd) will do or say, think, and feel as the story continues.

Response Sheet for Story Stems

Remember, you only need 20 total actions, thoughts or feelings for each story. What will the main character:

Do or Say

Think

Feel

Appendix G

Coding Scheme

For the purposes of this study, an aggressive response will be regarded as any response having a hostile, injurious, or destructive connotation, as defined by Bushman and Anderson (2002), and as told to the secondary investigator in personal communication with Bushman (2003). In order to train coders, the secondary investigator will explain the definition of an aggressive response to the coders. Then, sample responses created by the secondary investigator will be used to help train the coders to find aggressive responses. When the secondary investigator feels that the coders have been properly trained, they will each code a sample group of responses independently, and inter-coder reliability will be determined for this sample. Finally, if inter-coder reliability is acceptable with this sample, each coder will be given ten percent of the real sample to code independently and inter-coder reliability will be determined for this sample. Again, if inter-coder reliability is acceptable, then the rest of the sample will be randomly assigned to the two coders to be coded for aggressive responses. Coders will be blind to the condition from which each set of responses belongs.

Appendix H

BUSS PERRY AGGRESSION SCALE

The following questions deal with your beliefs about the way the world works. Using the scale that follows, please <u>circle</u> the number that best describes how you feel about each statement.

 1 = Extremely <u>Un</u>characteristic of Me 2 = Somewhat <u>Un</u>characteristic of Me 3 = Neutral 4 = Somewhat Characteristic of Me 5 = Extremely Characteristic of Me 					
1) When people are esp I wonder what they	becially nice, want.				
	1	2	3	4	5
2) Given enough provo I may hit another pe	cation, erson. 1	2	3	4	5
3) I flare up quickly bu	t get over it quic	kly.			
	1	2	3	4	5
4) My friends say that l somewhat argumen	l'm tative. 1	2	3	4	5
5) If somebody hits me	, I hit back.				
	1	2	3	4	5
6) I am suspicious of o	verly friendly st	rangers.			
	1	2	3	4	5
7) I am an even-temper	red person.				
	1	2	3	4	5
8) I can think of no goo for ever hitting a pe	od reason rson.				
	1	2	3	4	5

9 `) I	sometimes	feel	lik
	, -			

I sometimes feel like a powder keg ready to explode.

	1	2	3	4	5
10) I get into fights a lit the average person.	ttle more than				
	1	2	3	4	5
11) I often find myself disagreeing with pe	ople.				
	1	2	3	4	5
12) I sometimes feel the laughing at me beh	at people are ind my back.				
	1	2	3	4	5
 Other people alway to get the breaks. 	rs seem				
	1	2	3	4	5
14) Once in a while I ca the urge to strike ar	an't control 10ther person.				
	1	2	3	4	5
15) When people annoy tell them what I thin	y me, I may nk of them.				
	1	2	3	4	5
16) There are people was so far that we came	ho pushed me to blows.	2	2	4	F
	1	2	3	4	5
17) I wonder why some I feel so bitter abou	etimes it things. 1	2	3	4	5
18) When frustrated.					
I let my irritation sh	10w.	2	3	4	5
19) I am sometimes eat with jealousy.	en up				
	1	2	3	4	5

20) Some of my friend	s think				
Thi a noticad.	1	2	3	4	5
21) I tell my friends op when I disagree wi	enly th them.	2	3	4	5
	1.11.4	-	0	•	U
I have become so n I have broken thing	nad that gs.				
	1	2	3	4	5
23) Sometimes I fly off handle for no good	f the reason.				_
	1	2	3	4	5
24) I have threatened people I know.	1	2	2	4	5
	1	2	3	4	3
25) At times I feel I has a raw deal out of li	ve gotten fe.				
	1	2	3	4	5
26) If I have to resort to to protect my right	o violence s, I will.				
	1	2	3	4	5
27) I know that "friend about me behind m	s" talk 1y back.				
	1	2	3	4	5
28) I can't help getting when people disag	into arguments ree with me.				
	1	2	3	4	5
29) I have trouble cont	rolling				
my temper.	1	2	3	4	5

Appendix I

Experimental Script

This was the script that was followed for each group when conducting this research. What the experimenter said is in quotes. What the experimenter did is in italics.

1. "Hello, everyone. Before we start, I need you all to look over and sign the consent form".

The consent form was then handed out and collected.

2."Now that you all have read over the consent form, you can see this is a study about your reactions to televised sports. In order to do this, you must first watch a sports clip. The clip will take about twenty minutes. After that, I have some things for you to respond to. Those will take about 25 minutes to complete."

The clip was then started. After it was finished, while handing out the story stems, the experimenter said:

3."Ok. Now that you have all seen the clip, I have a few things for you to fill out. The first is a group of incomplete story stems. What these are...there are three of them...are a paragraph setting up a story that is incomplete. It is your job to complete each story by listing things you think the main character would do or say, think, or feel as the story continued. Now, don't take to long on any one of these, because we are only going to take ten minutes to do all three of them. And one more thing. I know it said to come up with twenty things...if you can't, that's ok. Just come up with as many as you can." When there was five minutes left and two minutes left, the experimenter let the participants know. When time was up, while handing out the questions about the clip, the experimenter said:

4."Ok. I need you to finish writing whatever phrase you are currently working on. If you turn those over on your desk. The next thing I have is a group of questions about the clip itself. Please pay attention to the instructions for each page, as the way to respond changes fo each. When you are done, if you turn them over so I can tell when everyone is done, that would be great."

When everyone had finished, while handing out the rest of the questionnaire, the experimenter said:

5."Ok. Now the next part is a group of questions about you. The first set is about your sports media usage in general, and the second part is about you in general. Again, the directions change throughout, so please be wary of that. Also again, when you are finished, if you turn these over on your desk, so I can tell when everyone is done and we can move on to the next part, that would be great"

Once everyone had finished, the experimenter said:

6."Ok. Now I have a question for you. If you could answer it on the back or the bottom of the last page, that would be great. The question is What was the purpose of this study?"

After all participants had a chance to write an answer, they were debriefed and allowed to leave.

Appendix J

The General Aggression Model*



*This model was taken from Anderson, C.A. & Bushman, B.J. (2002a). Human aggression. Annual Review of Psychology. 53, 27-51.

Appendix K

Sample Hostile Responses

Below is a sample of actual hostile responses from people who had watched one of the violent sports:

THE CAR ACCIDENT

Do/Say:

-What the hell are you doing?

-Are you OK? Well, my car's not!

-Physically assault her if she was angry enough.

-Punches out window.

-Administer middle finger.

-Fuck you, buddy!

-Calls police or beat up the person.

-Hey motherfucker, what the fuck?

-I should smash your face in.

Think:

-Shit! Fuck!

-That he wants to hit this guy.

-This person's stupidity makes me mad.

-What an idiot!

-Asshole.

-I want to hit this person for wrecking my car.

-I am going to kill this person.

-What a bitch!

-This motherfucker is dead.

-I'm a beat his ass to a pulp.

Feel:

-Angry

-Irritated

-A desire to punch the lady.

-Mad

-Upset

-Hostile

-Pissed

-Rage

PERSUADING A FRIEND

Do/Say: -Fuck your stereo.

Think:

-Shane is an idiot.

-Shane is lame.

- -What a wimp, he needs a vacation just as much as I do.
- -If he doesn't come with me he's not a good friend.

-Asshole.

-This guy is an idiot to not want to go.

Feel:

- -Angry
- -Upset
- -Agitated
- -Annoyed

-Frustrated

GOING TO A RESTAURANT

Do/Say:

- -Yell at the waitress.
- -Throw food at her.
- -Leave without paying.

-Did you have to kill the cow first?

-Tips her low.

- -Curses at whoever is in charge.
- -That was ridiculous.

Think:

-This is bullshit, I want a free meal.

-Hurry up woman!

- -About time! My stomach has almost eaten itself.
- -Ha-you're getting no tip.
- -What an idiot waitress.
- -Yell at waiter asking why it took so long.
- -I'm never coming back here.

Feel:

- -Angry
- -Like throwing food in her face.

-Outraged -Frustrated -Infuriated -Pissed -Unhappy -Ticked -Mad -Annoyed -Frustrated

Appendix L

Means and Standard Deviations

Pilot Study

	Mean	Standard Deviation
Enjoyment	3.04	1.54
Arousal	2.34	1.25
Boredom	3.46	1.25

Main Study

	Mean	Standard Deviation
% of hostile responses	21	12
Enjoyment	3.26	1.41
Arousal	2.48	1.05
Boredom	3.27	1.19
Hostility	2.69	.72
Physical Aggression	2.44	.87
Verbal Aggression	3.07	.86
Argumentativeness	2.45	.76
Psychoticism	.78	.14
Extraversion	.21	.24
Neuroticism	.55	.31
Social Desirability	.75	.18
Sports Media Consumption	1.51	1.26

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