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Human Aggression and Sports Media Violence

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HUMAN AGGRESSION AND SPORTS MEDIA VIOLENCE

A Thesis Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

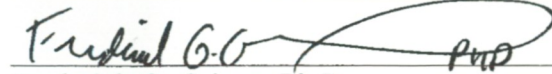
In Partial Fulfillment of the Requirements for
The Degree of Master of Arts

By
Justin M. Wright

August 2006

HUMAN AGGRESSION AND SPORTS MEDIA VIOLENCE


Date Recommended 8/10/06



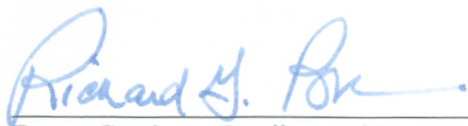
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Human Aggression and Sports Media Violence

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The present study was designed to gain more perspective on human aggression and how sports media violence affects aggression levels. Anderson (1997) defined aggression as behavior that is intended to harm others or one's self. Anderson (2001) defined media violence as a portrayal of intentional harmful behavior directed at another person or the self. To define sports aggression, the definition of aggression must be manipulated slightly. The definition should be changed to a form of behavior intended to injure, whether or not an actual injury occurs, directed at an opposing team or opposing player to gain an advantage during the progression of play. An example of this would be trying to hurt a key player of the opposing team so that this player can no longer perform at a level expected of him by others. This definition does not include aggressive behavior toward people watching the game or officials during the game. It only pertains to player-on-player aggression and those actions taken that are allowed within the rules of the game. Sports media violence does not include players and fan interaction, two fans fighting, or violent acts between players and officials.

Many studies have been completed looking at human aggression levels and how certain media types affect aggression levels. In a study completed in 2001, it was shown that viewing violent movies can increase aggression levels in participants (Bushman & Anderson, 2001). Another study completed by Phillips (1986), examined and compared

the homicide rates in America the day after a major boxing match had occurred to the average homicide rate. His findings suggest that a relationship between viewing boxing and homicide rates exists. The more people who viewed the fight the night before, the higher the homicide rates were in America the next day. The present study is attempting to look specifically at the effects of sports violence in the media on aggression levels of its viewers.

Participants completed a Buss-Perry Aggression Scale before the experiment began to assess their pre-experiment aggression levels. Then the participants were randomly assigned to view one of the video groups: non-violent sport, violent sport, non-violent movie, or violent movie. The participants were randomly assigned to conditions based on the times at which they signed up to complete the study. They next watched a five-minute video clip. The content of each video varied by the conditions of the experiment, for example, nonviolent sport, violent sport, nonviolent movie, or violent movie. After watching the video, each group was given the Word Completion Task to assess post-video aggression levels.

Results indicated that after viewing violent forms of video material, sports and non-sports, aggression levels increased in participants significantly. But when participants viewed non-aggressive material their aggression levels did not increase significantly.

Therefore, exposure to violent sports has the potential to increase levels of aggression following such exposure, just as exposure to violent movies and television shows increases aggression. However, there are other factors that play a role in the development of aggressive behavior.

Introduction

Anthony Storr, a psychiatrist, stated:

We generally describe the most repulsive examples of man's cruelty as brutal or bestial, implying by these adjectives that such behavior is characteristic of less highly developed animals than ourselves. In truth, however, the extremes of 'brutal' behavior are confined to man; and there is no parallel in nature to our savage treatment of each other. The sombre fact is that we are the most cruel and most ruthless species that has ever walked the earth; and that although we may recoil in horror when we read in newspapers or history books of the atrocities committed by man upon man, we know in our hearts that each one of us harbours within himself those same savage impulses which lead to murder, to torture, and to war. (Storr, 1970, pp. 203-204)

The purpose of the present study was to evaluate one of the purported causes of aggressive behaviors in humans. Exposure to violent media has the potential to increase aggressive behaviors in those who are exposed (Bushman & Anderson, 2001). With the proliferation of sports and media coverage of sports, an increasing number of people are exposed to video clips of aggressive sports behavior such as hockey fights or big hits in football. The purpose of the present study was to examine if these violent sports highlights have similar effects on people's aggressiveness as other forms of violent media do. This study will allow us to begin to distinguish between two different types of media: those that cause people to be aggressive and those that do not.

Definitions of the constructs help understand what is involved in aggression and media violence. Anderson (1997) defined aggression as behavior that is intended to harm others or one's self. An example of this would be a person attacking another person with the intent of causing the second person to feel pain. Anderson defined media violence as a portrayal of intentional harmful behavior directed at another person or the self. To define sports aggression, the definition of aggression must be manipulated slightly. The

definition should be changed to a form of behavior intended to injure, whether or not an actual injury occurs, directed at an opposing team or opposing player to gain an advantage during the progression of play. An example of this would be trying to hurt a key player of the opposing team so that this player can no longer perform at a level expected of him by others. A large hit on the quarterback in a football game would be an illustration of this. This definition does not include aggressive behavior toward people watching the game or officials during the game. It only pertains to player-on-player aggression and those actions taken that are allowed within the rules of the game. Sports media violence does not include players and fan interaction, two fans fighting, or violent acts between players and officials. All of these actions are aggressive, but not the focus of sport aggression.

Sports

The first issue to be examined is how much contact people in the United States have with sports in general to provide better understanding how much people's lives revolve around sports. The number of sports offered and participation levels in sports are growing by leaps and bounds (National Youth Sports Programs, 2005). In 2005, the National Youth Sports Program reported that 75,977 children participated in some type of organized sports-related activity. These children participated for a total of 9,497,125 hours in such activities. Since 1969, 1,994,156 participants have participated in sports programs across the United States (NYSP, 2005). These numbers do not include or account for all of children's sport-related activities in which they may be involved on a daily basis. Such unaccounted for activities include backyard games or neighborhood activities not organized by the National Youth Sports Programs Organization. Nor do

they include time spent watching sporting events. Discounting the informal activities in which children participate, a reason for the increase in the number of children participating in sport could be an increase in children due to population growth. Another reason could be the emphasis that society has placed on youth being more active in organized sports. The sports industry in its entirety is a multi-billion dollar industry. Surely a business of this size has significant impact on people and their actions, beliefs, and attitudes.

Adult participation numbers in sports are similarly large in size. The U.S. Census Bureau (2005) released statistics reporting adult participation in sports. They stated that, in the year 1999, 15% of adult Americans participated in basketball, 12% in golf, 7% in baseball, and 6% in soccer. These numbers may not be large, but when compared to other leisure activities they are comparable. For example only 50% of all adults in America dine out, 40% read books, 18% use the Internet, and less than 20% go to bars or night clubs (U.S. Census Bureau, 2005). While sports participation is still not as large as other leisure activities, it still consumes a large amount of many people's lives.

The sports industry is not only related to youth and adult sports participation, but it is also a multimillion dollar media industry. A recent national study reported that the average American child consumes about 40 hours of media per week (Bushman & Anderson, 2001). The amount of time put into watching television by children could be considered a full-time job in today's society (Bushman & Anderson, 2001). Not all of this time is spent watching cartoons or movies; a considerable amount of this time is spent watching sports figures play the games that our children love.

What child, who is actively participating in sports, does not dream of being professional athlete one day? This dream stems from being exposed to their heroes on a daily basis. Children base many decisions on these role models. Consequently, if these role models are seen as violent individuals then the children who look up to them will become more violent because they base decisions on these violent role models' actions.

A recent increase in popularity of such shows as *Sportscenter* and *The Best Damn Sports Show Ever* indicates that Americans cannot get enough of our sports heroes. These types of sports shows replay the previous day's actions almost continuously throughout the next day. If there happened to be an aggressive play in a game one day, the video highlight of the event will be replayed several times that night and the next day. This increases the likelihood the viewers will be exposed to such aggression.

Heuristics

Exposure to aggressive actions increases the availability of heuristics. A heuristic is an established schema, a mental structure that represents some aspect of the world, which we use to interpret situations in which we find ourselves. Heuristics are formed from past experiences, past reinforcements, and culture (Aronson, 2004). When individuals come into contact with a new situation for which they do not have a pre-existing schema, they use already established schemas to make decisions. If the amount of exposure to certain types of stimuli increases, then more heuristics will be formed based on the stimuli. For example, if individuals observe violent behaviors (i.e., one person hits another person) across several instances in different situations, then they begin to believe that violence is allowed in similar situations. This, then, becomes a new heuristic for them. These individuals may begin to make decisions in their personal lives

based upon this new heuristic and may become more aggressive and violent themselves. The more decisions that are based on this heuristic, the more available it is to them and the more likely they are to use it in the future to make decisions.

Applying the heuristic concept to sports media violence, if people are exposed to large amounts of sports media violence, they begin to believe that it is acceptable behavior in our society. Therefore, they begin to make more decisions using these sports-violence heuristics, which, in turn, increases subsequent levels of aggressive behaviors. The more the heuristics are used, the more likely aggressive behavior becomes. These heuristics may first be applied only to sports situations but, over time, may generalize to other areas (Aronson, 2004).

Media Violence

In a joint statement released in 2000 by six major professional societies, including the American Psychology Association, the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, the American Medical Association, the American Academy of Family Physicians, and the American Psychiatric Association, the dangers associated with exposing children to media violence were delineated. The statement put forth by the group indicated that there were over 1,000 studies supporting the overwhelming connection between viewing media violence and performing aggressive behavior for children (Bushman & Anderson, 2001). With all these data supporting the idea that media violence increases aggression levels in children, it would seem logical that sports media violence would also increase levels of aggression in children and others who view it.

Television and Movie Violence

Of all the programs that are televised, 58% of contain violence and, of these, 78% of the violent acts are committed by people who do not exhibit remorse, receive criticism, or penalty for the violent act (Seppa, 1997). Additionally, over 40% of the violent acts were committed by characters portrayed as heroes or role models for children (Cantor, 1995). Because individuals love to watch their heroes in action and television puts them closer to the heroes, it would seem logical to complete a study that looks longitudinally at television watching and its correlation with violent acts committed against others. In just such a study completed by Johnson, Cohen, Smailes, Karen, and Brook (2002), results indicated that, after observing over 700 families for 17 years, there was a significant association between the amount of time spent watching television during adolescence and early adulthood and subsequent violent acts against others. This study did not specify the type of violent media being viewed (e.g, drama, comedy, reality, or sports television). But since the study occurred in a real world setting, Johnson et al. were able to examine severe acts of violence against others, such as assault and armed robbery. These acts were more likely to occur in households in which people were often exposed to violent media stimuli. Huesmann, Moise-Titus, Podolski, and Eron (2000) also found a relationship between viewing violent media as children and aggressive behavior as adults. The small causal effect was found even after a 15-year follow-up.

Most previous studies in the area have found that short-term exposure to media violence increases aggressive tendencies in those who view it (Anderson, 2003; Lewis, 2001). This increase happens at all stages of a person's development (Anderson, 2003; Lewis, 2001). As an example, Anderson (1997) found that state hostility, hostility at the

current time, increased after watching violent movies. Trait hostility, hostility felt consistently over time, also increased after viewing violent movies. This study also showed that watching a violent movie clip increases the relative accessibility to aggressive thoughts. Lewis (2001) exposed elder adults (age 55 and older) and college-age adults to violent and nonviolent movie clips and found an increase in aggressive tendencies following exposure to the violent, but not the nonviolent, clip.

Violent Song Lyrics

A study conducted by Anderson, Carnagey, and Eubanks (2003) examined exposure to violent song lyrics and their effects on aggressive thoughts and feelings. The study asked undergraduate students to suggest pairs of contemporary rock songs that had certain characteristics. These characteristics included one song of the pair having clearly violent lyrics and the other song in the pair having minimal or non-violent lyrics. Both sets of lyrics had to be understandable, both had to fall into the same genre of music, and both songs had to last approximately the same length of time. Following exposure to the songs, participants' levels of hostility were evaluated. The study concluded that a song with violent content in its lyrics increases subsequent hostility levels when compared to a song with non-violent lyrics. Also, the same study evaluated slower songs with violent and non-violent lyrics and found similar conclusions. The songs with more violent material still increased hostile feelings in participants even though they had a slower tempo (Anderson et al., 2003).

The Anderson et al. (2003) study was concerned with an auditory stimuli, which is a strong memory technique but not as strong as a visual stimulus would be. For such language in songs to affect a listener, the listener must be attentive to the words and

actions described by the words. However, for a visual stimulus to be noticed the viewer must also be attentive to the stimulus, but the stimulus does not have to be as clear or understandable as an auditory stimulus must be (Anderson, 2003).

Still, violent lyrics are played continuously over and over again on radio stations across the nation and this is why such lyrics affect people in the manner they do (Anderson, 2003). Any stimulus experienced again and again will be retained longer in a person's short term memory (i.e., the mere exposure effect, Bornstein, 1989). These replayed lyrics, then, have a better chance of then transferring to long term memory, which may produce long-term effects in people's hostility levels. This effect would be increased if the stimuli included both visual and auditory components, as seen in studies completed by Anderson (c.f., 2003) looking at violence in movies. Other studies have been conducted that also point to an increase in aggression levels after repeated exposure to violent auditory stimuli (Bushman & Anderson, 2001). So, logically, one could conclude that exposure to both an auditory and visual stimulus would increase hostility in someone more than a single auditory stimulus would.

Media Exposure and Violence

Media violence not only increases the likelihood that violent acts against others will occur, but it also has a numbing effect on the viewer (Aronson, 2004). This numbing effect causes violent actions in real life to be viewed in a more accepting manner. A study completed by Thomas, Horton, Lippincott, and Drabman (1977) investigated how viewing violence can numb one's reactions when faced with aggression in a real life setting. In the study, participants either watched a violent police video or a video of a nonviolent volleyball game. After a short break, the participants viewed a verbal and

physical altercation between two preschoolers. The participants who viewed the more violent video, the police video, responded less emotionally than those who had viewed the nonviolent video, the volleyball game. While such an emotional reaction stops people from becoming upset easily, it, at the same time, increases their indifference toward victims of violent acts. This indifference may cause people to be more accepting of violent acts and increases the likelihood that violence is viewed as a necessary part of life. A follow up study conducted by Thomas (1982) demonstrated that college students who viewed violent media not only showed physiological evidence of greater acceptance of violence in general, but also, when given the opportunity to administer electric shocks to fellow students, gave a more powerful shock than did those students in the control condition of the experiment who did not view violent media. Therefore, being exposed to violent media numbs people to its effects, which, in turn, makes those individuals more accepting of aggressive acts, in both themselves and others, in the future. Once people become more accepting of aggression, they are more likely to use violence in their daily lives.

Media violence and its correlation to aggressive behaviors in children has been compared to the correlation between smoking and lung cancer (Bushman & Anderson, 2001). Though neither variable is the sole cause for the outcome, both are main contributing factors. It is important to remember that not everyone who smokes develops lung cancer, but those who smoke are at a higher risk for the disease. Similarly, not everyone who watches violent media exhibits aggressive behaviors, but those who watch violent media are at a higher risk for the behavior than people who do not. The short term effects of smoking and watching violent media are similar. The smoker gains pleasure

from the effects of nicotine as it enters the blood stream and is processed by the body (Bushman & Anderson). Also, a relief from the urge to have a cigarette is another short term reason for someone smoking (Bushman & Anderson). People obtain pleasure from watching violent media from the entertainment value of the movie or television shows (Bushman & Anderson). However, both media violence and cigarette smoking have severe long term effects. Repeated exposure to smoke through cigarettes increase the chances of developing lung cancer just as increased exposure to violence will increase the likelihood that a person will exhibit aggressive behaviors. There is a 0.4 correlation between smoking and lung cancer. This is a high correlation for two naturally occurring variables (Bushman & Anderson). While the correlation between media violence and aggression, 0.3, is not as high, it is still significant enough to indicate a meaningful relationship between the two variables (Bushman & Anderson).

Sports Media Violence

A study done by Phillips (1986) began to look directly at the sports media market. Phillips studied and compared the daily homicide rates in the United States the day after a major boxing match had occurred. The matches he used were highly publicized fights that many people could watch. His findings suggest a positive correlational relationship between viewing boxing and homicide rates. The more people viewing a fight the night before, the higher the homicide rate was the next day. This does not suggest that all people were affected so much by the fight that they killed someone the next day, but it does show how little is needed to produce a large effect. Phillips noted another interesting correlation: the race of the fighter who lost increased the violence directed against that race. For example, if a Caucasian fighter lost the fight then more deadly crimes would be

committed against Caucasian figures. The same occurred if the losing fighter was of African descent (Phillips, 1986). This shows again how a small factor such as the race of the losing boxer attached to a major media event can have a large effect on the people who viewed the fight as a whole. This shows how sports media violence is more available to be viewed now on such cable television channels as Showtime, Home Box Office, and Pay Per View as opposed to in the past when televised sporting events were not so readily available to the general public.

The Present Study

The present study examined sports media violence, a violent visual stimulus with no violent auditory stimulus, and its effects on aggression level. The main media source being evaluated in this study was televised sports violence. The study was designed to look specifically at the effects of sports violence in the media on aggression levels of viewers. Existing research has examined behaviors such as murders, rapes, assault, and battery following exposure to violent media programs, while not considering the sports media market.

The next logical step, then, is to divide media into different categories, such as sports media, reality television, or sitcoms, and evaluate violent and nonviolent programming and its effects within each of the areas. Looking at these areas of media exclusively will provide a better understanding of media violence. By doing this, the differential effects of media type on aggression levels in people can be examined. For example, does a drama about murder affect individuals' aggression levels more than a big hit in football? The present study was designed to take that next step and examine a

Method

Participants and Design

The participants for this study were 81 student (32 men and 49 women) volunteers recruited from psychology courses at a university in the southeast portion of the United States. The mean age was 21.84 years ($SD = 3.94$). The education level of the participants included 27 (33.3%) Freshmen, 9 (11.1%) Sophomores, 8 (9.9%) Juniors, 23 (28.4%) Seniors, and 14 (17.3%) graduate students.

The study is a 2 (Level of Violence: violent vs. nonviolent) x 2 (Media Type: sport vs. movie) between-subjects design in which the independent variables were time and level of violence. The dependent variable was the level of implicit aggression.

Measures

Demographics

Participants completed three items that collected demographic information on age, education level, and gender.

Aggression

The pre-test given in the beginning of the experiment to assess baseline levels of aggression was the Buss-Perry Aggression Scale (Buss & Perry, 1992; see Appendix A). This scale was a Likert-type survey composed of 29 statements. Questions 1 through 9 assess physical aggression. An example item was, "Given enough provocation, I may hit someone." Questions 10 through 14 assess Verbal Aggression. An example of an item was, "I often find myself disagreeing with people." Statements 15 through 21 assess levels of anger. An example of an item was, "Sometimes I feel like a powder keg about to explode." Statements 22 through 29 examined levels of hostility. An example statement

was, "Other people always seem to get the breaks" (Buss & Perry, 1992). The Buss-Perry has been shown to have adequate psychometric properties, with test-retest reliability at $r = .80$, and Cronbach's alpha of $.89$ (Buss & Perry, 1992). Appropriate convergent validity has been demonstrated via a correlation between the Buss-Perry and penalty minutes received in hockey games (Bushman & Wells, 1998).

The aggression battery used as the dependent measure was Craig Anderson's Word Completion Task Questionnaire (see Appendix B). This questionnaire was composed of 98 word fragments in which the participant is asked to make the fragment into a word. An example was sh__ t. This can be filled in as "shoot," which is an aggressive word, or as "shirt," a non aggressive word. All of the fragments can yield words that were clearly aggression-related. This questionnaire was given as a post-test.

Videos

The sport videos were comprised of sports clips from soccer and football. Each video featured clips of plays drawn from these sports. The level of contact associated with the sport was the determining factor as to which video the sports clip was placed. The level of contact for each sport was based on a study conducted by Bredemeier, Weiss, Shields, and Cooper (1986) which organized sports into three categories based on contact level. Low Contact Sports such as swimming, tennis, baseball, track and golf were placed in the nonviolent video category. The violent video included sports scenes with moderate to high levels of aggression in them. According to Bredemeier, Weiss, Shields, and Cooper (1986), High Contact Sports include such sports as football, wrestling, judo, hockey, and rugby. Each clip lasted approximately five minutes.

The other media type video included a scene from the movie *Gorillas in the Mist* (Peters & Apted, 1988) and a fight scene from *Karate Kid* (Louis & Avildsen, 1984). These two movie scenes were used in a study conducted by Bushman (1995). In Bushman's study, both scenes were rated as equally exciting. The main difference between these scenes was the amount of violence in them. The scene from *Karate Kid* was rated higher on violence than the scene from the movie *Gorillas in the Mist*.

Procedure

After signing an informed consent document (see Appendix C), the participants completed the Buss-Perry Aggression Scale before the experiment began to assess their pre-experiment aggression levels. Then the participants were randomly assigned to view one of the four videos: non-violent sport, violent sport, non-violent movie, or violent movie. The participants were randomly assigned to conditions based on the times at which they signed up to complete the study. After watching the five-minute video, each group was given the Word Completion Task to assess post-video implicit aggression levels.

Results

The present study was conducted to evaluate the effects of viewing sport and media violence on levels of aggression. To ensure that the results are due to the presentation of the independent variable, there cannot be any differences in participants' aggression levels prior to the study. Therefore, a 2 (Level of Violence: violent vs. nonviolent) x 2 (Media Type: sport vs. movie) Analysis of Variance (ANOVA) was conducted on the scores from the Buss-Perry Aggression Scale to examine baseline aggression levels. An alpha level of .05 was used for all statistical tests.

As seen in Table 1 and Table 2, when comparing aggression levels of the participants using the Buss-Perry Aggression Scale before the experiment, a significant main effect for media type appeared between participants. Participants in the sport condition ($M = 94.28$, $SD = 3.76$) had higher levels of starting aggression than participants in the nonsport condition ($M = 82.00$, $SD = 3.71$). No interaction effect was found, and there was no main effect for violence.

Table 1

Group Means for the Buss-Perry Scale

Source	N	M	SD
Violent			
Sport	20	88.05	19.42
Non-sport	20	82.85	23.88
Non-violent			
Sport	20	100.50	32.02
Non-sport	21	81.14	17.35

Table 2

Analysis of Variance for the Buss-Perry Scale

Source	df	<i>F</i>	<i>p</i>	η^2
Violence (V)	1	1.03	.31	.01
Media Type (MT)	1	5.40	.02	.07
V x MT	1	1.80	.18	.02
Error	77	(565.03)		

Due to the beginning difference between groups, a 2 (Level of Violence: violent vs. nonviolent) x 2 (Media Type: sport vs. movie) Analysis of Covariance (ANCOVA) was used to compare scores of the Word Completion Task. The ANCOVA was used to establish an equal starting level of aggression for each group. As shown in Tables 3, no interaction between violence and media type was found. These results support the third hypothesis that no interaction would occur between level of violence and media type.

Table 3

Analysis of Covariance for the Word Completion

Source	df	<i>F</i>	<i>p</i>	η^2
Violence (V)	1	9.69	.00	.11
Media Type (MT)	1	.01	.95	.00
V x MT	1	2.22	.14	.03
Error	76	(.013)		

As shown in Table 3, a significant main effect was found for level of violence. A planned *t* test was run to compare violent sports group ($M = .37$, $SE = .03$) to the non-

violent sports group ($M = .34$, $SE = .02$), ($t(38) = .90$, $p = .00$, $d = .37$). The results of this test show that there was no significant difference between participants in the violent sports group and the non-violent sports group. Therefore hypothesis two is not supported by the results of the planned t test; sports violence did not have a significant effect on the participants. A planned t test was run comparing non-violent non-sports media ($M = .29$, $SE = .02$) to violent non-sports media ($M = .41$, $SE = .03$). A significant difference was found between these groups ($t(39) = 3.28$, $p = .95$, $d = 1.14$). These results support hypothesis one, watching violent movies increases subsequent aggression levels. Table 4 reports the raw means for each of the groups on the Word Completion Task

Table 4

Group Means for the Word Completion

Source	N	M	SD
Violent			
Sport	20	.37	.13
Non-sport	20	.41	.13
Total	40	.39	.13
Non-violent			
Sport	20	.34	.09
Non-sport	21	.287	.10
Total	41	.313	.10

Discussion

The present study was conducted to evaluate the effects of viewing sports media violence on aggression levels in adults. The first specific hypothesis under study was that participants exposed to a violent movie clip would show higher aggression levels than those exposed to a nonviolent movie clip. This hypothesis is a replication of past research findings. The second specific hypothesis was that participants exposed to a violent sports clip would show higher levels of aggression than participants exposed to a nonviolent sports clip. Third, no interaction was expected between levels of violence and media type. Hypothesis one was supported because a significant difference was found between the non-violent movie clip group and the violent movie clip group. There was no significant difference found between non-violent sports media group and the violent sports media group. This result does not support hypothesis two, that participants exposed to a violent sports clip will show higher aggression levels than participants exposed to a nonviolent sports clip. This was the case even after controlling for starting levels of aggression. No interaction was found to exist between levels of violence and media type, which supports the third hypothesis that no interaction will occur.

Hypothesis One

The results of the study support hypothesis one and suggest that individuals who view violent movies experienced higher levels of implicit aggression than individuals who viewed nonviolent movies. These results support research completed by others (Anderson, 2001; Lewis, 2001) that indicate exposure to violent forms of media results in increased aggression levels in those who view it. Further, both short-term (e.g., Anderson, 2001) and long-term (e.g., Huesmann et al., 2003) studies suggest that

exposure to violent media can lead to subsequent aggressive behavior. Thus, the results of the present study complement and add to the existing literature that indicates a relationship between viewing violent media forms and aggression.

Hypothesis Two

The results do not support hypothesis two and indicate that there is no relationship between viewing violent sports media and subsequent aggressive behavior that may occur afterward.

Future Research

This research may lead to future studies of specific forms of television media and the effects these specific forms have on people. For example, how does a violent television drama or violent television comedy affect aggression levels in individuals both in the short-term and over an extended period of time? Another line of research should examine the difference between specific sports such as the difference between soccer, golf, and football when it comes to affecting aggression levels in individuals.

Aggression levels are not the only form of media influence that could be researched. A future research topic may be how a certain medium type (i.e., situation comedies) influence stress levels or depression in people. The future of this research in this area is limitless. Other forms of research could include studying the presence of guns during the experiment, social economic status of the participants, family structure, and the amount of television watched. All of these individual characteristics could be linked to higher aggression levels in participants.

Another important area of research is gender differences in aggression. Are men more likely to become aggressive after viewing violent sports than women? What if a

different media type is being viewed, (e.g. daytime soap operas)? Does this have a larger effect on women than men? These are areas that future research should consider and proceed to study.

Limitations

There are some limitations to this study. The number of participants used in the study could be a limiting factor for the results. By having a small number of participants, the significance of the study as a whole did not have as much statistical power as it could have. However, since statistical significance was found, this may not be a limitation. On the other hand, however, perhaps with a greater deal of statistical power, more significant findings would have come to the fore.

The amount of money spent on developing the sports video clips and the quality of the sports video clips used in the experiment also limit this study. It is possible that if the video clips were better that they could have exerted a greater influence over the participants. As with the low power mentioned above, this greater influence would simply increase the statistical significance found in the study. Another possible limitation or weakness of the study in relation to the video clips could be that the excitability of each clip was not explicitly measured. It is possible that the results found could be due to the violent sports include more excitability. It could be this excitability, and not the violence, per se, that is driving the increased levels of aggression.

Conclusion

In conclusion, the results of the study supported all but hypothesis number two of the hypotheses under study. First, exposure to violent movies increased levels of implicit aggression as compared to exposure to nonviolent movies. Second, exposure to violent sports showed no signs of increasing aggressive thoughts or behaviors in the participants. Third, there were no interactions between level of violence and media type. Thus, it appears as though viewing violent sports does not have the same short-term effects as viewing violent movies. The results of the study are important as it is imperative that we, as a society, demonstrate an understanding of how stimuli in our environment negatively influence our behaviors. By having a better understanding, we can then work to counteract these influences and make our society a psychologically healthier place.

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Appendix A

Buss-Perry Scale

Please rate each of the following items in terms of how characteristic they are of you. Use the following scale for answering these items.

1	2	3	4	5	6	7	
extremely uncharacteristic of me						extremely characteristic of me	

- 1) Once in a while I can't control the urge to strike another person. _____
- 2) Given enough provocation, I may hit another person. _____
- 3) If somebody hits me, I hit back. _____
- 4) I get into fights a little more than the average person. _____
- 5) If I have to resort to violence to protect my rights, I will. _____
- 6) There are people who pushed me so far that we came to blows. _____
- 7) I can think of no good reason for ever hitting a person. _____
- 8) I have threatened people I know. _____
- 9) I have become so mad that I have broken things. _____
- 10) I tell my friends openly when I disagree with them. _____
- 11) I often find myself disagreeing with people. _____
- 12) When people annoy me, I may tell them what I think of them. _____
- 13) I can't help getting into arguments when people disagree with me. _____
- 14) My friends say that I'm somewhat argumentative. _____
- 15) I flare up quickly but get over it quickly. _____
- 16) When frustrated, I let my irritation show. _____
- 17) I sometimes feel like a powder keg ready to explode. _____
- 18) I am an even-tempered person. _____

- 19) Some of my friends think I'm a hothead. _____
- 20) Sometimes I fly off the handle for no good reason. _____
- 21) I have trouble controlling my temper. _____
- 22) I am sometimes eaten up with jealousy. _____
- 23) At times I feel I have gotten a raw deal out of life. _____
- 24) Other people always seem to get the breaks. _____
- 25) I wonder why sometimes I feel so bitter about things. _____
- 26) I know that "friends" talk about me behind my back. _____
- 27) I am suspicious of overly friendly strangers. _____
- 28) I sometimes feel that people are laughing at me behind me back. _____
- 29) When people are especially nice, I wonder what they want. _____

Appendix B

ID# _____

1. b_h_ _ _

2. in_ _ re

3. mu_ _ er

4. spea_ _

5. expl_ _ e

6. w_ _ m

7. ki_ _

8. h_ r_ _

9. cho_ _ e

10. att_ c_ _

11. des_ _ _ _ _

12. sho_ _ t

13. r_ p_ _ _ t

14. str_ _ e

15. b_ rn

16. p_ _ son

17. m_ _ gle

18. sn_ re

19. h_ t

20. sm_ ck

21. sm_ _ e

22. kn_ _ _

23. s_ _ b

24. dr_ _ n

25. ang_ _

26. fi_ _ t

27. ha_ e

28. c_ t

29. wa_ _

30. f_ m_ _

31. sl_ p

32. r_ pe

33. off_ _ _ _

34. cr_ _ l

35. f_ r_ _ _

36. n_ _ t_ _

37. w_ _ ked

38. en_ age

39. h_ tr_ d

40. prov_ _ e

Appendix C

INFORMED CONSENT DOCUMENT
Sports Violence and Aggression Study

You are being asked to participate in a study that will assess how watching sports media affects aggression levels in adults. *Please read the following material carefully.* It describes the purpose of the study, the procedure to be used, risks and benefits of your participation, and what will happen to the information collected from you. This study is being conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this study. You must be at least 18 years of age to participate.

The investigator will explain to you in detail the purpose of this study, the procedures used, and the potential benefits and risks of participation. You may ask him/her any questions you have to help you understand and discuss with the researcher any question you may have.

If you then decide to participate in the study, please sign on the next page of this form in the presence of the person who explained the study to you. You should be given a copy of this form to keep.

1. **Nature and Purpose of the Project:** This study is examining the affects of watching sports media on aggression levels.
2. **Explanation of Procedures:** Your participation in this study will require you to complete a brief demographics survey, two word completion surveys, and watch a 20 minute video. The entire study should take approximately 40 – 50 minutes to complete entirely.
3. **Discomfort and Risks:** The risks to participation appear to be small. There is always a slight chance that any item could bring about problems. Please let the researcher know if any thing bothers you.
4. **Benefits:** You may be able to receive extra credit for your psychology course, if your instructor offers such credit (be sure to check with your instructor). Your instructor should offer alternative forms of extra credit. Other benefits include a sense of having helped contribute to science and a sense of pride or accomplishment for helping a fellow student. Benefits to science include providing data that will be used to help understand how viewing violence can affect aggression levels in individuals.
5. **Confidentiality:** Your identity will be completely anonymous. There will be no way for researchers to know who completed which questionnaires. The data collected from you will be combined with data collected from other people, ad will be presented as averages, which makes it impossible to identify individual participants.
6. **Refusal/Withdrawal:** Refusal to be in this study will have no effect on any future services you may receive from Western Kentucky University. Anyone who agrees to participate in this study is free to qui a any time with no penalty.
7. **Questions:** If you have any questions about the study, please ask them at this point. If you think of questions later on, direct them to Rick Grieve, Ph.D., at (270) 745-4417, Monday – Friday from 9:00 am until 4:00 pm.

You understand also that it is not possible to identify all potential risks in an experiment procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

Printed Name of Participant

Signature of Participant

Date

THE DATED APPROVAL ON THIS CONSENT FORM INDIATES THAT THIS PROJECT HAS BEEN
REVIEWED AND APPROVED BY THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS
REVIEW BOARD

DR. PHILLIP E. MYERS, HUMAN PROTECTION ADMINISTRATOR
TELEPHONE: (270) 745-4652

Appendix D

WESTERN KENTUCKY UNIVERSITY
Human Subjects Review Board
Office of Sponsored Programs
106 Foundation Building
270-745-4652; Fax 270-745-4211
E-mail:

In future correspondence please refer to HS06-172, April 13, 2006

Justin Wright
c/o Dr. Rick Grieve
TPH
Department of Psychology
WKU

Dear Justin:

Your revision to your research project, "Human Aggression and Sports Media Violence," was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Expedited Review Level until August 1, 2006.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. Also, please use the stamped Informed Consent documents that are included with this letter. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,

Sean Rubino, M.P.A.
Compliance Manager
Office of Sponsored Programs
Western Kentucky University

cc: HS file number Grieve HS06-172