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The Forgotten Medium: The Impact of Reading  
Violent Literature on Aggressive Thoughts

McKay Stevens

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Science

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December 2012

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## ABSTRACT

### The Forgotten Medium: The Impact of Reading Violent Literature on Aggressive Thoughts

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Media violence in television, film, video games, and music has been linked to increased aggression. Only in recent years have researchers begun to investigate the impact that reading violent literature can have on individuals. The present study exposed individuals to either a violent or nonviolent story and measured aggressive cognitions. No significant effect was found for story type on aggressive cognitions but a gender effect for aggressive word completions was found. Discussion centers on possible differences between media types as well as future suggestions for investigations into violent literature.

Keywords: aggression, books, literature, media, cognition

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## **Introduction**

Then it seems our first business is to supervise the production of stories, and to choose only what we think suitable, and reject the rest. We shall persuade mothers and nurses to tell our chosen stories to their children, and by means of them to mould their minds and characters which are more important than their bodies. The greater part of the stories current today we shall have to reject. (Plato, Republic)

For over five decades, researchers have investigated the impact that violence in the media has on individuals. The research began looking at violence in television and film and has moved on to investigate video games and music. Observational, correlational and experimental studies have all shown connections between violent media and aggression in individuals and have helped to build key theoretical propositions (Anderson et al., 2003). Much of the research has come in answer to public concern over nationally spotlighted tragedies such as the Columbine school shootings (Anderson & Bushman, 2001). One of the most recently spotlighted tragedies is that of the “West Memphis Three” murders (Berlinger, Sinofsky, Docurama (Firm), & New Video Group., 2005). In this case, a large part of the prosecution’s evidence was a satanic book that belonged to one of the suspects, Damien Echols. Echols was on trial for the brutal murders of three 8-year old boys and chose to take the stand in his own defense. While questioning Echols, the prosecution focused on highlighted portions of this satanic book in an attempt to establish a motive. They made the case that Echols study of the satanic text had influenced him to perform a satanic ritual killing. Echols was eventually convicted of the murders and sentenced with the death penalty. Although literature is one of the oldest forms of communication, there are only a few studies to date that empirically investigate the assumption that reading violent literature can affect subsequent behavior. Of these studies, none has addressed the impact that

reading about violence has on an individual's thoughts and thought processes. The present study looks to address this concern.

This literature review will first examine the few studies that address the impact that reading violent literature can have on individuals. Since there is little research in this area, the review will then cover the general aggression model (GAM), which is a key theoretical perspective for understanding how violent media can affect individuals. Based on propositions from the general aggression model, the review will finally look at research on how other forms of violent media affect cognition. Through all of this, the case will be made that the long forgotten medium of literature can have an impact on aggressive thoughts in a similar way that television, film, video games, and music do.

### **Importance of Literature**

Books are an extremely popular medium and communicate ideas and experiences to individuals from early childhood throughout their lifetime. A recent survey conducted by the Association of American Publishers and the Book Study Group reported that 2.57 billion books were sold in the United States in 2010 (Association of American Publishers, 2011). Popular books like the Harry Potter and Twilight series account for hundreds of millions of those sales alone. In fact, the New York Times Best Sellers list changed the way they calculate top sellers because every book in the Harry Potter Series was constantly dominating the top spots (Brown, 2002). Both of these book series have cult followings and have also been turned into extremely popular movies.

Although there are hundreds of studies about how movies affect viewers, there are only a few studies that empirically investigate how all of this reading affects readers. On average, humans from age 15 onward report reading about a half hour each day (United States

Department of Labor, Bureau of Labor Statistics, 2011), but what is in the content of these books? Coyne et al. (in press) performed a content analysis of adolescent literature on the New York Times Best Sellers list and found these books contain a great deal of violence. Additional research by Collins-Standley, Gan, Yu, and Zillman (1996) found that from the age of two, little boys prefer violent stories to other genres. With all of the books being sold and reading being done, potentially containing violent content, it is imperative that we expand the research to a form of violent media that has been largely overlooked: literature. I now turn to a review of the research investigating the impact that reading violent literature can have on individuals.

### **Violence in Literature**

A quick search of the term “media violence” in the PsychInfo database returns over 700 sources of research, but very few of these studies have focused on violence in literature. From this research, we know about the effects of watching violence in TV and film, acting out or “playing” violence in video games, and even listening to violence in music (Anderson et al., 2003), but the impact of reading violence in literature is just starting to be discovered (Bushman, Ridge, Das, Key, & Busath, 2007; Coyne, Ridge, Stevens, Callister, & Stockdale, 2012; Kirsh & Olczak, 2002a).

Some of the first studies to investigate the impact of reading violent literature on individual aggression used comic books as a source (Kirsh & Olczak, 2000, 2001, 2002a, 2002b). The researchers had participants read extremely violent comic books or relatively non-violent comic books and then complete projective measures. The measures consisted of ambiguous scenarios of physical and relational aggression. Participants were supposed to judge intent, propose retaliation and assess the affect of the provocateur. Participants who read the extremely violent comic books attributed greater hostile intent to the provocateur and proposed



more aggressive retaliation than those who read relatively non-violent comic books. The authors also found that trait hostility was correlated with hostile intent and retaliation. The comic book form of literature includes a visual aspect of violence similar to what is experienced in cartoons and therefore investigation into strictly textual forms of violence is still needed.

In one of the first studies looking into violent literature without pictures, Bushman et al. (2007) investigated the impact of violence in religious literature on subsequent aggression. They found that reading violence in a scriptural text caused individuals to engage in more aggression than reading violence in a secular text. They also found that reading about violence that was sanctioned by God in a scriptural text produced more aggression than reading about violence that was not sanctioned by God. The authors in this study used a short-term measure of physical aggression as the dependent variable with opponents in an ostensible reaction-time task delivering blasts of white noise to each other's headphones. One could argue that comic books and scriptures are unique forms of literature and therefore these effects might not apply to mainstream contemporary readers.

Coyne et al. (in press) moved the research on literature from specialty genres (i.e., comic books, scriptural texts) to analyzing the mainstream. The researchers performed a content analysis of the top forty most popular adolescent books on the New York Times Best Sellers list. While coding for physical, relational and verbal aggression, the authors found that adolescents are exposed to about 30.23 acts of aggression for every hour of reading popular novels. Coyne, Callister, Stockdale, and Coutts (in press) also performed a content analysis on new forms of popular comic books among teens known as *manga*. They found many different kinds of aggression (physical, relational, verbal, etc.) throughout these books that averaged to about one

act of aggression every three pages. They also found correlational evidence that those who have been exposed to manga are more aggressive than those that haven't.

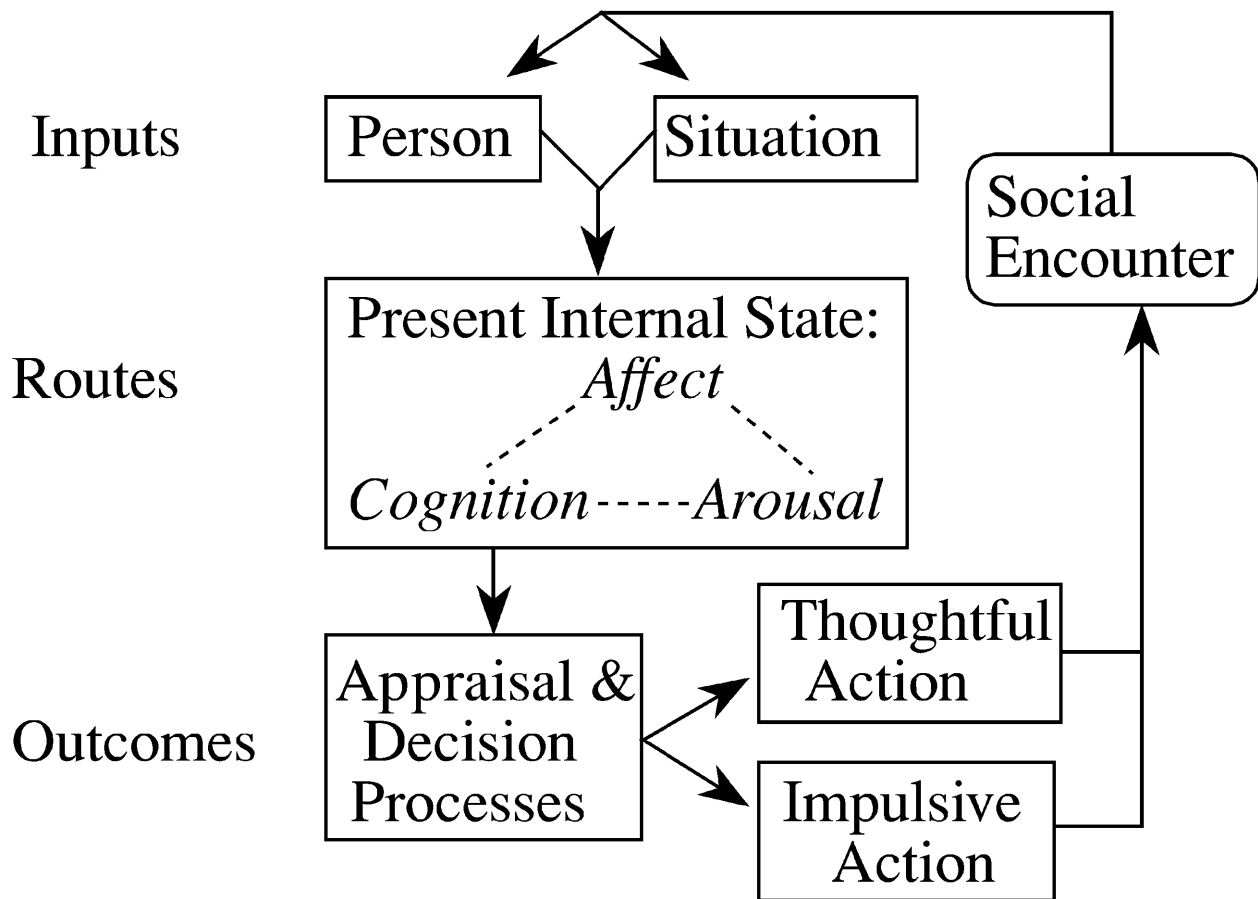
The most recent, and only, experimental studies conducted on violence in literature outside of comic books and scriptural texts looked into the differential effects of reading physical aggression as opposed to relational aggression (Coyne, Ridge, Stevens, Callister, & Stockdale, 2012). The results showed that participants who read a story involving relational aggression were more relationally aggressive than those who read a story involving physical aggression, whereas participants who read a physically aggressive story were more physically aggressive than those who read a story involving relational aggression. It is important to note that these studies measured behavioral outcomes of reading violent literature. In the past, as new media such as film and video games have emerged, the empirical research first looks to see if violence in these media has any effect on behavior. In the case of violence in literature, this picture is now starting to emerge. The next step is often to understand any mediating processes involved in that relationship. As individuals think about violent acts before actually committing them, it is important to understand how violent literature affects one's cognition. To address this concern we will look to the General Aggression Model for an understanding of how other forms of violent media can affect individuals.

One critique of the literature review presented here might argue that it does not include studies that used violent vignettes as a source of violent literature. I decided not to include literature on studies that included vignettes because most of them are far too short (less than 100 words) to be considered a real short story (Coyne et al. 2012). The vignettes used in research studies are most often the measure of the dependent variable and not the manipulation of the independent variable. These measures contain very little descriptive detail and most often leave

intentions of the characters ambiguous (e.g., Crain, Finch, & Foster, 2005). For the present study we are interested in short stories that are longer than these vignettes and comparable to what an individual might sit down and read in real life. We are also interested in using the short story as the manipulation and not as part of a dependent measure. The reasoning here has led me to not include various sources of literature that utilize violent vignettes. We will now turn to an understanding of the General Aggression Model.

### **The General Aggression Model (GAM)**

One of the most common theories in experimental social psychology for understanding and making predictions about the impact of media violence in society today is the General Aggression Model (Anderson & Bushman, 2002). The model has evolved over time (Anderson, Anderson, & Deuser, 1996; Anderson, Deuser, & Deneve, 1995) to include aspects of key theoretical frameworks on aggression (e.g., cognitive neoassociation theory [Berkowitz, 1993], social learning theory [Bandura, 2001], script theory [Huesmann, 1986], excitation transfer theory [Zillman, 1988] and social interaction theory [Tedeschi & Felson 1994]). Figure 1 outlines the key propositions of the “person in the situation” episode of the cyclical model.



**Figure 1.** The general aggression model episodic processes (from Anderson & Bushman, 2002).

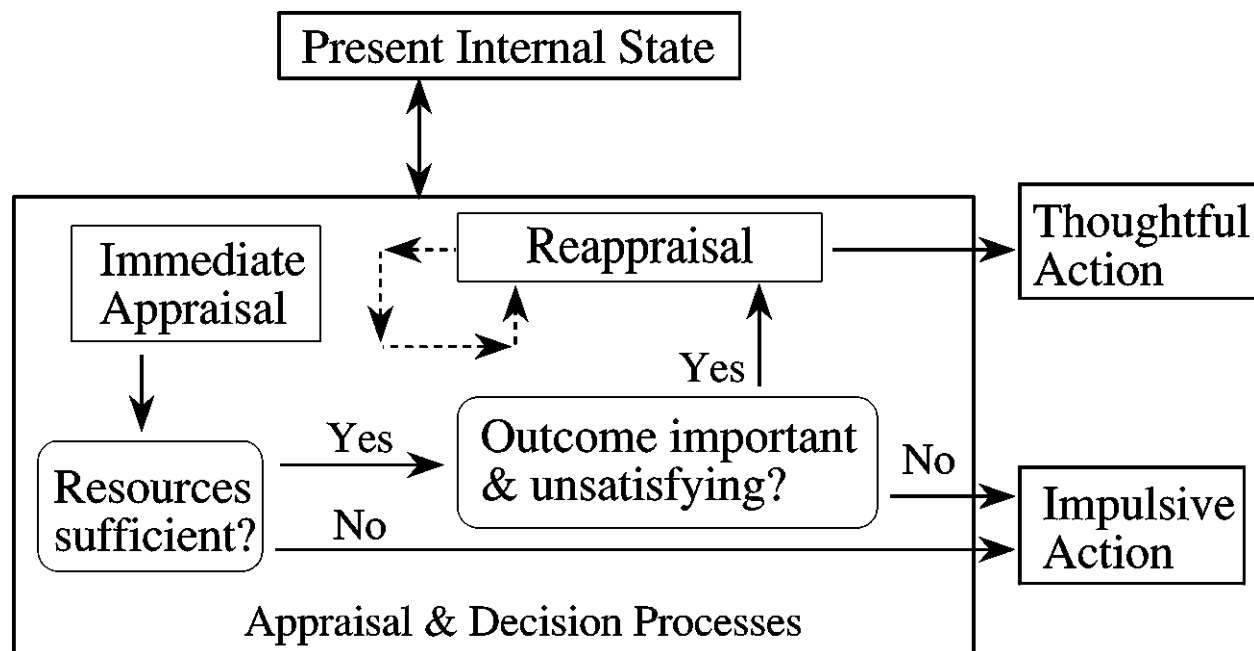
In essence the model proposes that in each social situation there are personological and situational input variables that affect an individual’s cognition, affect, and arousal, all of which can influence appraisal and decision processes that influence the outcome. Beyond the “person in the situation” episode, GAM also contains a developmental aspect, which proposes that all of these episodes mold an individual over time and change the way one thinks and feels about aggression, possibly creating an aggressive personality.

GAM first addresses input variables of the person and the situation in a single episode cycle (Anderson & Bushman, 2002). These can range from biological and psychological factors to environmental and social factors. Some key factors within the person that can predict aggression are one’s traits, beliefs and even one’s sex. Within the situation, researchers have

found that frustration, provocation, and aggressive cues, such as violent media, can affect aggression. These are not exhaustive lists of person and situation findings, but general examples of different variables that have been researched within the general aggression paradigm. Person and situation variables can also combine interactively or additively to produce an effect (Anderson & Carnagey, 2004). GAM next describes mediating variables that are affected by these various person and situation inputs.

The general aggression model describes three key mediating variables: cognition, affect and arousal (Anderson & Bushman, 2002). These variables are interconnected within the individual's present internal state. For example, a situational input variable such as media violence can prime aggressive thoughts, which in turn can affect an individual's mood or level of arousal. Input variables can thus exert their influence by acting upon one, two, or all three mediating variables. The combined impact of input variables on the internal state affects appraisal and decision-making processes and the ultimate outcome.

The appraisal and decision processes are outlined in more depth in Figure 2 and broken down into automatic and controlled processes. The immediate appraisal is automatic and contains information about affect, goals, and intentions. As the immediate appraisal is affected by the present internal state, someone who is thinking aggressive thoughts may interpret ambiguous motives of another individual to be aggressive and in turn feel angry and develop violent goals of retribution with intentions to act. Once immediate appraisal has taken place, an individual may engage in impulsive action unless he or she has enough resources, such as time and cognitive capacity, to engage in the controlled processes of reappraisal. To engage in reappraisal, the individual must also see the immediate appraisal outcome as being important and unsatisfying.

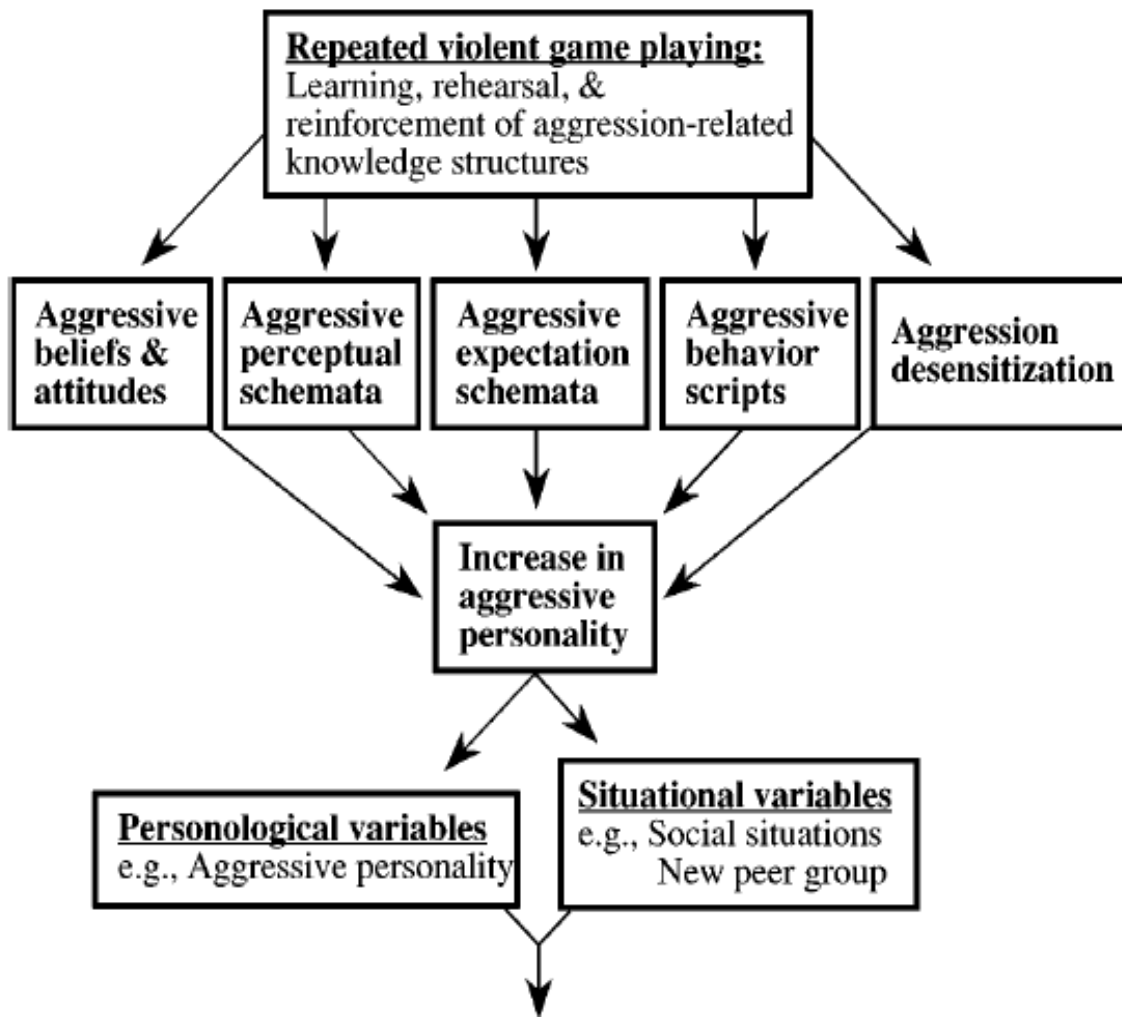


**Figure 2.** The general aggression model: expanded appraisal and decision processes (from Anderson & Bushman, 2002).

While reappraising the situation the individual searches for alternative views by looking at causes of the event, accessing relevant memories and any other scripts or knowledge structures that are applicable. There may be many different reappraisals of the situation that ultimately determine the course of thoughtful action to be taken. Both the automatic processes of immediate appraisal and the controlled processes of reappraisal can lead to aggressive or nonaggressive outcomes based on how the input variables in a situation have affected the present internal state. The outcome of each situation cycles back to become an input variable for future episodes. Beyond the “person in the situation” episode, GAM includes a developmental aspect explaining how cumulative experiences can build an aggressive personality.

GAM views each episode as a learning trial that builds knowledge structures that are key to an individual’s personality (Anderson & Bushman, 2002). Figure 3 labels five knowledge structures from GAM that are indicative of an aggressive personality: aggressive beliefs and attitudes, aggressive perceptual schemata, aggressive expectation schemata, aggressive behavior

scripts, and aggression desensitization. These knowledge structures are activated through a cognitive process that can operate without awareness. As individuals are exposed to media violence these cognitive knowledge structures are learned, rehearsed, and reinforced, and with increased exposure they become chronically accessible and automatic (Higgins, 1996). As this happens, the individual becomes more aggressive in his or her characteristic pattern of perceiving and interacting with the world. The review will now address the empirical evidence on the cognitive effects of media violence to gain a better understanding of how reading violence may affect an individual's cognition.



**Figure 3.** (General Aggression Model, as in Figure 1) The general aggression model personality processes (from Anderson & Bushman, 2002).

### **Cognitive Effects of Media Violence**

Throughout the 1980s many key aggression researchers formulated theories suggesting that cognition is an important mediating variable to investigate within violent media research. As authors developed theories about behavioral scripts (Huesmann, 1986) and cognitive associations (Berkowitz, 1989), hypotheses needed to be tested. These theories started to gain empirical support in the 1990s with pioneering studies like Bushman & Geen’s (1990) cognitive emotional mediators paper. Since that time numerous studies have been done investigating various forms of



media (e.g., TV, film, video games, and music) to show that consuming violent media affects the way an individual thinks (Bushman & Huesman, 2006; Anderson et al. 2010). These changes in thinking are mostly seen in an individual's behavioral scripts, world schemas and normative beliefs about violence. Many of the studies investigating cognition as a mediating variable over the last couple decades have used ambiguous story stems, implicit association tasks, word fragment tasks and word pair association tasks to measure aggressive cognition. The literature review will now go through empirical studies on cognitive effects of violence in television and film, video games, and music.

Exposure to violence in television and film has been shown to increase aggressive thoughts in many different paradigms. The first of these was a study by Bushman & Geen (1990) where participants were exposed to either violent or non-violent films and asked to write down all their thoughts for three minutes following the exposure. Those who had been exposed to a violent film wrote down more aggressive thoughts as rated by outside judges who were blind to hypotheses. Anderson (1997) introduced an implicit, reaction time task to the aggressive cognition research. After exposure to a violent or non-violent film, participants were measured on how fast they could read certain categories of words on a computer screen. Those who had been exposed to a violent film read aggressive words faster than control words. This showed a priming effect on aggressive cognitions in an implicit, reaction time task. Bushman (1998) also used an implicit lexical decision task to study aggressive cognitions in response to violent film but then introduced a new measure. Participants who watched a violent film in this study also wrote down more aggressive word associations for target homonyms than did those who watched a non-violent film. It wasn't really until violent video games became popular and the General

Aggression Model was formulated that researchers really delved deeply into understanding the mediating variable of cognition.

Studies on the cognitive effects of violent video games became abundant following the guiding theory of the General Aggression Model. In 2001, Anderson & Bushman conducted a meta-analysis on 20 independent tests of the relationship between video game violence and cognition covering 1,495 participants and yielding an average effect size of  $r = .27$ . The data showed that violent video games increased aggressive thoughts for males and females alike, as well as children and adults. The majority of these studies were experimental and thus show a causal link between violent video games and aggressive cognition. Many of these studies used the same methodologies and measures as the studies done on violent television and film. New measures and methodologies were also introduced and follow up meta-analysis covering even more participants and designs have shown similar effects (Anderson, Carnagey, Flanagan, Benjamin, Eubanks, & Valentine, 2004; Bushman & Huesman, 2006; Anderson et al. 2010).

As the General Aggression Model pointed heavily to cognition as a key mediating variable in violent video game research, scientists looked into new ways to measure cognition in the first decade of the 21<sup>st</sup> century. Many researchers utilized a word completion task to assess aggressive cognition (Anderson, Carnagey, Flanagan, Benjamin, Eubanks, & Valentine, 2004; Barlett & Rodeheffer, 2009; Carnagey & Anderson, 2005; Easin, 2006). In studies like this, participants are randomly assigned to play a violent or non-violent video game and then fill out the word completion task. This task involves completing 98 word fragments by filling in blank letters to form a word. Half of these words can be completed to be either violent or nonviolent (e.g. “h\_t” can become hit or hat). Accessibility of aggressive thoughts is measured by the proportion of word completions that are aggressive.

Other researchers utilized a story completion task to measure aggressive cognition (Giumetti & Markey, 2007; Greitemeyer & Osswald, 2009; Moller & Krawe, 2009). For these studies participants play a violent or non-violent video game and then complete 3 ambiguous story stems. Each story has the main character experience a negative outcome. Participants are asked to write down 20 thoughts they have on how the character might think, feel, or act in response to the situation. Responses are then coded by outside judges as to how aggressive or non-aggressive they are. Each study found that participants who play a violent video game complete the story stems with more aggression than those who play a non-violent video game.

Besides word and story completion tasks, researchers have also used various questionnaires to assess aggressive cognitions. Farrar, Krcmar, and Nowak (2006) used a revised version of the Buss-Perry aggression questionnaire (1992) to assess aggressive intentions. After playing a violent or non-violent video game, participants were told to imagine a scenario where someone had bumped into them in the hall and spilled their drink and contents of their backpacks. They then responded to items on the Buss-Perry questionnaire like “I would tell this person openly when I disagree with them” by circling anchors from 0 (extremely uncharacteristic of me) to 6 (extremely characteristic of me). Anderson, Carnagey, Flanagan, Benjamin, Eubanks and Valentine (2004) used the Buss-Perry aggression questionnaire as well but also included other questionnaires like the Attitudes towards Violence scale (ATVS: Anderson, Benjamin, Wood, & Bonacci, 2006) and the Adolescent Attitudes towards Violence scale (AATVS: Funk, Elliott, Urman, Flores, & Mock, 1999) in a correlational study. In this study the authors found that exposure to violent video games is correlated with aggressive behavior and that the relationship is primarily mediated by aggressive cognitions.

The picture is now very clear through a number of different measures and methodologies that cognition is one of the primary mediating variables in the link between violent video games and aggressive cognition. What about violent media that don't contain visual stimuli though? Although there have been fewer studies on the cognitive effects of violent lyrics in music, the findings are the same as studies done on violence in television, film and video games. These studies become especially important to the present investigation, as violent lyrics in music are the closest form of media to violent literature, due to the fact that neither of them contain the visual components that television, film, and video games have.

Anderson, Carnagey, and Eubanks (2003) conducted experiments investigating the impact that listening to violent lyrics in music has on aggressive cognition. They used three different measures of aggressive cognition, one in each experiment, including the word completion task and implicit association reaction time task previously mentioned. They also introduced a new measure involving word-pair associations revised from Bushman (1996). In this experiment participants listen to a song with violent or non-violent lyrics and then rated word pairs on how similar they were based on 7-point scales. Ten of the words were clearly aggressive (e.g. choke, fight, kill, gun) and 10 of the words were ambiguous (e.g. alley, night, bottle, stick). They found that those who listened to a song with violent lyrics saw greater similarity between aggressive-ambiguous word pairs than those who listened to a song with non-violent lyrics. Fischer and Greitemeyer (2006) also used the word completion task but had participants listing attributes of the opposite sex as well. They found that those who listened to a song with aggressive lyrics listed more negative attributes of the opposite sex as well as completed more words in an aggressive manner.

Despite the wealth of research on media violence and aggressive cognitions, the results remain mixed when it comes to gender effects. Some studies find no effect of gender as a moderating variable of media violence on aggressive cognition (Anderson, Carnagey, & Eubanks, 2003) while others have found effects (Fischer & Greitemeyer, 2006). The investigation into gender effects in this study is therefore exploratory.

### **Overview**

The literature addressed thus far has been important in accomplishing the task of setting the significance and background of the present study. I have shown that literature is an important medium to look at. Reading is a part of everyday life for many individuals. We have looked at studies that show that literature contains acts of violence just like every other medium studied, however it has been overlooked for the most part in the aggression research. There have been a number of studies that address the impact that television, film, video games and music have on aggressive cognition but none that address how reading violent literature affects aggressive cognition. The natural progression for each form of media investigated in the past is to first see if the violent medium yields aggressive outcomes. This step has been accomplished for violent literature now. The General Aggression Model would next point to the key mediating variable of cognition. The present study looks to understand how reading violent literature affects aggressive cognition. The following hypotheses are based upon what the General Aggression Model would predict.

*H<sub>1</sub> – Word Completion:* Those who read a story containing violence will complete more words in an aggressive manner than those who read a story containing no violence.

*H<sub>2</sub> – Word Pair Association:* Those who read a story containing violence will rate greater similarity between ambiguous-aggressive word pairs than those who read a story containing no violence.

*Research Question* – Some research in the past has shown a gender effect for violent media. There is no previous research dealing with a cognitive effect of violent literature, therefore, the gender effect in this study will be posed as a research question and not a specific hypothesis.

## **Method**

### **Participants**

Participants consisted of 134 (51.5% female; *M* age = 22.28, *SD* age = 5.81 years) undergraduate students at Brigham Young University. Participants were recruited via email from their professors and given either extra credit or a bookstore gift card for participation. There were 71 in the word completion condition and 63 in the word pair association condition (4 participants were dropped from the word pair association condition due to incomplete data).

### **Procedure**

Participants were contacted by their professors through email or in class and informed about the experiment and offered extra credit or a ten-dollar bookstore gift card in exchange for their participation. They were given a link to the online study and told that participation was voluntary.

The first page of the online study was the consent form where participants were told the study was on the impact reading has on thought processes. The participants were then told they would be reading a short story and filling out a couple of questionnaires and some demographic information. After electronically signing the consent form, each participant filled out

demographic information. Participants then read through the stimulus story. Half of these contained the physically aggressive version of the story and half contained the nonaggressive version of the story. After reading through the stimulus story, half the participants filled out the word completion task and half filled out the word-pair association task. All participants then filled out the Buss-Perry (1992) aggression questionnaire. At this point participants were debriefed about the study and asked if they wanted to withdraw their information.

### **Instruments**

*Stimulus stories* (Coyne, Ridge, Stevens, Callister, & Stockdale 2012). Two versions of a short story, containing approximately 1,200 words each, were used for manipulation. The basic premise of both stories is that a new college freshman has just moved into her dorm and is dealing with a difficult roommate. One story contains a violent episode including slapping, scratching, pushing, and throwing objects between the roommates, whereas the other story does not contain this material. In all other aspects the stories are identical. In pilot testing, Coyne et al. found that the stories are rated equal in important control categories such as excitement, fright, and humor. The physically aggressive story was rated as being more physically aggressive than the control story. This story was used in this study because it has been shown to have an effect on aggressive behavioral outcomes in previous research (Coyne et al., 2012).

*Word completion task* (Anderson, Flanagan, Carnagey, Benjamin, Eubanks, & Valentine, 2002). Accessibility of aggressive thoughts was measured by a word completion task, which contains 98 word fragments. Forty-nine of these fragments can be filled out to form aggressive or nonaggressive words (e.g., “ki\_\_” can become *kill* or *kiss*). The proportion of aggressive words is computed by totaling the number of aggressive words and dividing it by the total number of words completed and serves as the measure of aggressive cognition. This measure has been

utilized in research with other non-visual, violent media such as music (Anderson, Carnagey, & Eubanks, 2003) and therefore was selected for this study.

*Word similarity task (Anderson, Carnagey, & Eubanks, 2003).* This task is an adaptation of Bushman's original word-pair association measure in his 1996 study on trait hostility and cognitive associations. Bushman identified 10 words as being aggressive (blood, butcher, choke, fight, gun, hatchet, hurt, kill, knife, and wound) and 10 words as being ambiguous, having both aggressive and non-aggressive meanings (alley, animal, bottle, drugs, movie, night, police, red, rock, and stick). Bushman found that those scoring high in trait hostility saw more similarity between aggressive and nonaggressive words than those scoring low in trait hostility.

Participants rated all possible pairs of these 20 words on how similar they were. Ratings were made based on 7-point scales from 1 (not at all similar, associated, or related) to 7 (extremely similar, associated, or related). There were 45 aggressive-aggressive word pairs, 100 aggressive-ambiguous words pairs and 45 ambiguous-ambiguous word pairs. An average similarity score was calculated for each category of word pairs. The aggressive-aggressive similarity score and ambiguous-ambiguous similarity score were then combined and averaged to act as a within subject baseline. Ambiguous-aggressive averages were then subtracted out to create a difference score for each participant. Smaller scores represented a perceived greater similarity between aggressive and ambiguous words in comparison to the participant's own judgments of aggressive-aggressive and ambiguous-ambiguous word pairs

*Buss-Perry aggression questionnaire (Buss & Perry 1992).* The Buss-Perry aggression questionnaire is a 29-item Likert-type scale used to assess aggressive personality. Participants respond to statements like "If somebody hits me, I hit back" on a 7-point scale from 1 being "extremely uncharacteristic of me" to 7 being "extremely characteristic of me." Scores range



from 29 to 203. These 29 items have been factor analyzed to 4 subscales measuring physical aggression, verbal aggression, anger, and hostility. Buss and Perry (1992) report a coefficient alpha for the AQ of .89 and a test-retest reliability of .80. For this study the coefficient alpha for the AQ was .86. Buss and Perry validated the measure by demonstrating a significant relationship between peer nominations of aggressiveness and scores on the four aggression subscales for male college students. This measure was used as a covariate in this study.

*Demographic questionnaire.* This measure assessed basic demographic information: age, gender, marital status, race, religion, class standing, and college major. This questionnaire was used to describe the sample and to separate groupings for data analysis. This measure also included questions about how interesting and exciting the story was on Likert-type scales from 1-7.

## **Results**

### **Preliminary Analyses**

I first wanted to see if the stories differed as Coyne et al. (2012) did in a pilot study to check and see if the stimulus story types were perceived differently. I performed a one-way MANOVA with story type (violent vs. nonviolent) as the independent variable and questions about “how interesting, exciting, engaging, enjoyable and believable?” the story was as well as questions about “how much you identify with Tori and Stacey in this story?” as the dependent variables. An overall effect of story type was revealed, Wilks Lambda of .869, Pillai’s Trace of .131, Hotelling’s Trace of .151, and Roy’s Largest Root of .151 ( $F = 2.343, p = .022, \eta^2 = .131$ ). This significant MANOVA permits univariate F tests. Significant differences were found for how exciting the story was and for how believable the story was. The violent story ( $M = 4.31$ ) was perceived as being more exciting than the nonviolent story ( $M = 3.73$ ),  $F(1, 131) = 4.64, p =$

.033,  $\eta^2 = .034$ . Additionally, the nonviolent story was rated as being significantly more believable ( $M = 4.44$ ) than the violent story ( $M = 3.49$ ),  $F(1, 131) = 10.25, p = .002, \eta^2 = .073$ .

There were no significant differences between the stories on any other measured variable.

Due to the fact that students participated in the study online I also wanted to check to see if the factors of where they took the study and on what device they took the study made a difference in their responding. One female participant was dropped from analysis at this point as she reported completing the study on a device other than a laptop, desktop, phone, or tablet that I could not account for and also scored on an extreme end as an outlier. I conducted a 4 (location: home, work, school, other) X 4 (device: laptop, desktop, phone, tablet) factorial ANOVA on the primary dependent variable for each of the groups (group A taking the word completion task, group B taking the word similarity task). Group A showed no significance for either main effect of where they took the study  $F(3, 61) = .796, p = .501, \eta^2 = .038$  or on what device they used  $F(3, 61) = .614, p = .609, \eta^2 = .029$ . No effect was found for the interaction either  $F(3, 61) = 1.665, p = .184, \eta^2 = .076$ . Group B also showed no significance for either main effect of where they took the study  $F(2, 56) = 2.39, p = .101, \eta^2 = .079$  or on what device they used  $F(1, 56) = 2.36, p = .130, \eta^2 = .040$ . No effect was found for the interaction either  $F(2, 56) = .803, p = .453, \eta^2 = .028$ . These variables were therefore dropped from subsequent analyses.

### **Main Analyses**

To see the trends in the data, Table 1 summarizes the means and standard deviations of the various conditions.

Table 1

Means (with standard deviations in parentheses) for word completion task and word similarity task as a function of story type and gender.

Gender	Type of Story	
	Violent	Nonviolent
Word Completion Task		
Male	.24 (.016)	.22 (.016)
Female	.20 (.016)	.18 (.016)
Word Similarity Task		
Male	0.61 (.09)	0.74 (.10)
Female	0.69 (.09)	0.54 (.09)

### Word Completion – Group A

A 2 (story type: violent vs. nonviolent) X 2 (gender: male vs. female) between-groups analysis of covariance was conducted to assess the impact that story type and gender had on the word completion task. The dependent variable was the proportion of aggressive word fragments to total word fragments completed by participants. The Aggression Questionnaire was used as a covariate to control for individual differences in aggressive personality.

Preliminary checks were conducted on the covariance assumptions of normality, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. There were no violations of assumptions. The 2 x 2 ANCOVA yielded only one reliable effect for gender,  $F(1,66) = 6.80, p = .012, \eta^2 = .093$ . Specifically males ( $M = .23$ ) completed more word fragments aggressively than did females ( $M = .19$ ). No effect was found for story type  $F(1, 66) = 1.73, p = .193, \eta^2 = .026$  or for the interaction  $F(1, 66) = .000, p = .983, \eta^2 = .000$ .

When the analysis is run as a 2 (story type: violent vs. nonviolent) X 2 (gender: male vs. female) analysis of variance without the covariate the picture stays the same. The effect for

gender stays significant  $F(1,67) = 6.74, p = .012, \eta^2 = .091$ . No effect for story type  $F(1,67) = 1.617, p = .21, \eta^2 = .024$  or the interaction  $F(1,67) = .000, p = .999, \eta^2 = .000$ .

### *Word Similarity – Group B*

A 2 X 2 between-groups analysis of covariance was conducted to assess the impact that story type and gender had on associations between aggressive and ambiguous words. The independent variables were story type (violent vs. nonviolent) and gender (male vs. female). The dependent variable was a difference score created by averaging the ambiguous-ambiguous word pairs with the aggressive-aggressive word pairs and subtracting out the ambiguous-aggressive word pairs average. The Aggression Questionnaire was used as a covariate to control for individual differences in aggressive personality.

Preliminary checks were conducted on the covariance assumptions of normality, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. There were no violations of assumptions. The 2 x 2 ANCOVA yielded no significant main effect for story type  $F(1, 57) = .012, p = .912, \eta^2 = .000$ , gender  $F(1, 57) = .453, p = .504, \eta^2 = .008$ , or the interaction  $F(1, 57) = 2.225, p = .141, \eta^2 = .038$ .

When the analysis is run as a 2 (story type: violent vs. nonviolent) X 2 (gender: male vs. female) analysis of variance without the covariate the picture stays the same. No significant effect for story type  $F(1,58) = .062, p = .805, \eta^2 = .001$ , gender  $F(1,58) = .304, p = .584, \eta^2 = .005$ , or the interaction  $F(1,58) = 2.10, p = .153, \eta^2 = .035$ .

## **Discussion**

In linking the results back to the original hypotheses proposed in this paper, I found that reading a story containing violence versus a story containing no violence had no significant effect on aggressive cognitions. Group means did trend in the predicted direction and did

approach significance for the word completion task but not for the word similarity task for women. It may have been possible that these women had something else triggered within them when they read these stories and that is why you see the reversal of means. They may have felt empathy for the character in the story with violence. There may be something different about reading or about this particular story that brings about other cognitive reactions than aggression. Follow up studies could look at including prosocial measures when looking at violent literature to see if something different is being triggered within the individual. Although Coyne et al. (2012) found a differential effect for physical and relational violence using the same stimulus story as this methodology, no effect has been found for a violent versus nonviolent story.

In looking at the research question on gender, males did report a significantly greater amount of aggressive cognitions than females did in the word completion task but not in the word similarity task. This gender finding fits with previous research from Anderson, Carnagey, and Eubanks (2003) who found the exact same effect dealing with both the word completion and word similarity tasks in a study on violent music. In the word completion task males may score higher because it is biased towards physical violence for which they show chronic accessibility (Bushman, 1998). Therefore it may be easier for males to form violent words from word fragments. However, when the full words are presented in the word similarity task, bias may be reduced and therefore, the gender effect disappears.

There are a variety of possible explanations for why no effect for reading violent literature on cognition was found in this study. It could be that the methodology was lacking in the amount of control that would decrease error variance and enable greater power in statistical analyses. Questions about where a participant went through the study and what device they used to go through the study were asked for this reason and analyses showed that there was no

significance. Some research on online experimentation suggests that it is just as good as research done in a physical laboratory (Horton, Rand, & Zeckhauser, 2011). In this way, the research done in this experiment adds to recent literature in showing that online studies are a viable alternative to physical laboratory studies. By using online technology to carry out experiments, researchers can save time and money for all involved. Although the factors of where you took the study and on what device you took the study didn't significantly affect the outcome in this study, the increased variability caused by these factors may still have been enough to depress the effect of story type on aggressive cognitions. Future research should try this again and have all participants come to the same place and participate on the same equipment.

Another reason for no effects could have something to do with the reading task itself. The dependent measures, used in this study, to assess aggressive cognition, have shown an effect when the independent variable was violent music (Anderson et al., 2003), and violent video games (Barlett & Rodeheffer, 2009; Carnagey & Anderson, 2005), so why not with violent literature here? There may be something about listening to violent music or playing violent video games that would cause a change in aggressive cognitions above and beyond what reading violent literature might cause. This may be the reason that there has been an effect with violent music but why there was no effect in the present study. One theoretical line of reasoning could deal with the availability heuristic and how it works on priming. Nisbett and Ross (1980) proposed that constructs that are more vivid or emotionally interesting are more easily activated from memory and more likely to spread to other constructs. Visual media and auditory media may be more vivid and emotionally interesting and therefore make aggressive cognitions more accessible than violent literature. With visual media and auditory media you have extra forms of stimulation from sights and sounds that are not present in literature. Along these lines, Standley

(2008) has shown that memories for music are more emotional and draw greater responses than memories for literature. This could be one reason that violent music has shown an effect on aggressive cognitions with these dependent measures but why violent literature did not in this study. It might be that when listening to music or playing violent video games, the emotionality of memories spread to a larger amount of aggressive constructs and thus make aggressive cognitions more accessible. Reading about violence may not have the same impact, as it does not contain the degree of emotionality and arousal that music or video games do. The General Aggression Model does suggest interactions between mediating variables of the present internal state (cognition, affect, and arousal). If affect and arousal are less present in literature then it may be harder to detect an impact of cognition alone. This might also make literature a key independent variable to research when teasing out variance and causal pathways due to mediating variables of the present internal state such as cognition.

Another problem could be the stimulus stories. One of the stimulus stories used in this experiment has been used in previous research (Coyne et al. 2012). In that experiment the researchers found that reading about physical versus relational violence has a differential effect on behavioral outcomes. They did not find any effect for violent versus nonviolent literature but suggested this as a next step in their discussion section. In looking at that effect here, while using the same stimulus story, there are a few problems that arise. A MANOVA examining variables of the story showed that participants rated the violent story as significantly more exciting but less believable. You would imagine that a violent story would be more exciting than a nonviolent story but the effect may then be due to the mediating process of arousal in the General Aggression Model and not the cognitive route alone. If the violent story is significantly less

believable it may be that it does not produce a large enough effect for the dependent measure to detect.

Future studies should look into different violent and nonviolent stimulus stories. In the beginnings of media violence research on video games, researchers looked at the most violent games like Doom and Wolfenstein. Violent literature research should start looking into graphic novels that individuals are reading these days such as the *Hunger Games* trilogy. I believe using novels like these, as a stimulus, would increase the strength of the independent variable, while also increasing external validity. A great way to go about selection would be to use the process Anderson et al. (2003) used in selecting violent versus nonviolent songs for their experiment on violent lyrics in music. They had students put in suggestions for violent and nonviolent songs. They then chose ten of those and had students rate the songs on how violent they were. Their final selection of songs for their experiments were those that were rated as most violent versus those that were rated as least violent. Students could suggest violent and nonviolent books that are interesting or “good reads” and then stories could be tested to see which are perceived as most and least violent. A stronger independent variable may make violent literature a little more vivid and emotionally interesting like violent music and therefore produce an effect on aggressive cognitions.

A limitation of this study could be the population the sample was drawn from. Brigham Young University students in Bushman et al. (2007) were affected less by violent literature than their counterparts at a European university and reported significantly lower means on an aggressive measure ( $M_s = 3.4$  and  $8.7$ , respectively). It might be that BYU students are more likely to score at the low end of scales of aggression with less variability, making it more difficult to detect differences between groups.



Finally, Bushman et al. (2007), like Coyne et al. (2012), did not look at violent versus nonviolent literature. In this way, the findings of no significance in the present study on violent versus nonviolent literature are not necessarily at odds with previous research on violent literature. It might be the case that violent literature doesn't affect aggressive cognitions as the General Aggression Model would predict. Some researchers have shown, through meta-analyses (Ferguson, 2007), that media violence doesn't have an impact on aggression. More research needs to be done in the specific area of violent literature in order for conclusions to be drawn.

### **Conclusion**

Although this study failed to find a significant impact of reading violent literature on aggressive cognitions, the search should not end. In the beginnings of extending media violence research on video games to that of violent music many contradictory findings arose (Anderson et al. 2003). It took time to sort through the variables and improve on designs. Violent literature is related to violent music more than violent video games in the aspect that it does not contain a visual component to stimulation. It is different from violent music in the way that it does not contain an auditory component. In this way, research on violent literature may take time, just as the research on violent music did, to sort through variables and improve on designs. The present study has given insight into some of the improvements that can move the research closer to an understanding of how violent literature affects individuals.

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## Appendix A

### Consent to be a Research Participant

**Introduction:** This research is being conducted by McKay Stevens in the psychology department at Brigham Young University under the supervision of Dr. Robert Ridge to examine the impact that reading has on thoughts. You are participating because you voluntarily responded to an invitation to participate in one of your undergraduate psychology courses.

**Procedures:** You will read a short story involving college students like you and fill out a questionnaire assessing thought processes. You will also fill out demographic information. It may take up to 20 minutes to complete these tasks.

**Risks/Discomforts:** There are minimal risks for participation in this study. You may feel some emotional discomfort when reading a story involving a dispute between college students.

**Benefits:** There are no direct benefits to you. The benefits to society include learning about how reading affects thought processes.

**Confidentiality:** All information provided will remain confidential and will only be reported as group data with no identifying information. All data will be kept on a secure server and only those directly involved with the research will have access to them. After the research is completed, the data will be erased.

**Compensation:** You will receive extra credit or course credit if authorized by your instructor. If not, there is no compensation.

**Participation:** Participation in this research study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to your class status, grade or standing with the university.

#### Questions about the Research

If you have questions regarding this study, you may contact McKay Stevens by e-mail at [mckay\\_stevens@yahoo.com](mailto:mckay_stevens@yahoo.com).

#### Questions about your Rights as Research Participants

If you have questions you do not feel comfortable asking the researcher, you may contact Dr. Gary Reynolds, IRB Chair, 422-6177, [gary\\_reynolds@byu.edu](mailto:gary_reynolds@byu.edu).

I have read, understood, and received a copy of the above consent and desire of my own free will and volition to participate in this study.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Stimulus Story: Violent

It had been one month since Tori first moved into the freshman housing complex and her first semester had gone much differently than she had expected. She was originally thrilled to be accepted into the most popular complex, The Estates, and even more so when she found out she was going to be roommates with the R.A. The R.A.s were always the most coveted girls to room with; they were seniors, they already knew the party places, and, most importantly, they knew the older guys.

The first day Tori moved in she nervously set her suitcase on the bed and started unpacking. When she heard someone enter the bedroom she turned to see one of the prettiest, skinniest, girls she had ever seen.

“Hey,” the RA said to Tori.

“Hi,” Tori replied hesitantly. Her roommate had beautiful red hair that was perfectly curled, and by the looks of the professional photos of her on the walls of the room, Tori guessed she was a model.

“My name’s Stacey. The bottom two drawers are yours as well as the right side of the closet,” said Stacey as she squirted herself with Ralph Lauren perfume and checked herself out in the mirror. Stacey continued, “Be sure to keep your side of the room clean and please don’t touch my photos or put anything near my Hendrix stuff.” Tori looked around, confused at her requests because Stacey’s side of the room was *filthy*, Tori didn’t really care about her pictures, and she had no idea what Hendrix things were off limits. “Thanks and I’ll see you later!” Stacey said as she whisked out the door.

Tori finished unpacking her things but it was tricky stepping over Stacey’s shoes, clothes, and purses that were strewn everywhere. When Tori went to go explore the rest of the apartment she saw that her room wasn’t the only room with pictures of Stacey. Both the hallway and the kitchen walls were plastered with self-portraits. While they were all very professional looking, the amount of them alone caused Tori to raise an eyebrow. Some pictures were also more scandalous than others in their pose and dress, so much so that Tori had to avoid looking at a complete section of the wall in the kitchen when she cooked her dinner that night.

The kitchen was connected to a small living room where two couches sat by a TV. When Tori walked past the TV she saw two things that made her smile. The first was a back patio that opened up to look outside where she could see glimpses of campus, and the second was in the corner of the room behind the couch. There she saw a signed Jimi Hendrix guitar, resting on a small stand to keep it upright! Above the guitar was a poster of him and below the guitar was a big stack of his vinyl albums, perfectly lined up with one another, also signed. Tori had always loved Hendrix growing up and this shrine of his albums and guitar was unbelievable!

She knew this collection had to be worth thousands so as she backed away she moved the couch a little further from it so it wouldn't bump the guitar if she sat down too fast.

When Tori finished dinner she sat on the couch with a schedule and a map to figure out where her classes were for the next day. She began to hear loud thumping and laughing from apartment above her. She looked up at the ceiling wondering what game could possibly make this much racket and shake the walls that much. As the thumping became louder, the walls began to shake and she heard a crash from the corner. The sound of guitar strings echoed in the room.

"Oh no!" thought Tori. When she went to see the guitar it was laying face down. Right as Tori went to pick it up to put it back in its place Stacey walked in.

"What did you do?" whispered Stacey.

As Tori nervously looked for words to explain what happened she looked down at the guitar to see a big crack in the body of it. The shock of this left her speechless.

"What did you do!" Stacey screamed. Stacey sprang towards Tori, who was still holding the broken guitar. Before she knew it, Tori's hair was leading her head as Stacey was holding tight and breathing hard. Stacey began to scream words at her and shake Tori's head back and forth by her hair. Something in Tori snapped.

"I didn't do anything to your guitar," Tori thought to herself. Tori pulled her head up and the palm of her hand smacked Stacey's cheek. Stacey's grip on Tori's hair lessened which gave Tori the perfect chance to go again, but this time Tori threw her weight towards Stacey's perfectly toned body. Stacey let go completely as she stumbled to the floor. Tori jumped back and they both looked at each other with fire in their eyes. When Stacey realized she was on the floor and Tori had won, her body crumpled a little underneath a sigh of resignation. While Stacey was still on the ground, the thumping and laughing from the apartment above them returned. Stacey looked up in confusion and after a few seconds the shaking walls caused one of her precious pictures to fall from the wall and crash onto the floor. Glass shattered everywhere as the frame took a few bounces.

Tori, upset but able to speak now, said, "That's what happened." She plopped on the couch and tears sprang from her eyes. This was not how she expected her first night of college to go.

"Oh," was the only thing Stacey could say. Stacey stood up and straightened her clothes. "Tori," she said nervously, "I'm sorry, I thought you had been playing with it."

"No," whispered Tori. "I just heard it fall and went to put it back."

"I'm sorry," Stacey eventually said again. By the hesitancy in Stacey's voice, Tori could tell that those words didn't come out of her mouth very often.

“It’s okay,” Tori said, but she still felt shaken up. In an attempt to smooth things over she said, “I might have an extra picture frame if you want to replace the one that just broke.”

“Yeah, sure. Thanks.”

With that, Tori stood up and went into her room. It was only the first day of college and nothing had gone as planned.

## Stimulus Story: Non-violent

It had been one month since Tori first moved into the freshman housing complex and her first semester had gone much differently than she had expected. She was originally thrilled to be accepted into the most popular complex, The Estates, and even more so when she found out she was going to be roommates with the R.A. The R.A.s were always the most coveted girls to room with; they were seniors, they already knew the party places, and, most importantly, they knew the older guys.

The first day Tori moved in she nervously set her suitcase on the bed and started unpacking. When she heard someone enter the bedroom she turned to see one of the prettiest, skinniest, girls she had ever seen.

“Hey,” the RA said to Tori.

“Hi,” Tori replied hesitantly. Her roommate had beautiful red hair that was perfectly curled, and by the looks of the professional photos of her on the walls of the room, Tori guessed she was a model.

“My name’s Stacey. The bottom two drawers are yours as well as the right side of the closet,” said Stacey as she squirted herself with Ralph Lauren perfume and checked herself out in the mirror. Stacey continued, “Be sure to keep your side of the room clean and please don’t touch my photos or put anything near my Hendrix stuff.” Tori looked around, confused at her requests because Stacey’s side of the room was *filthy*, Tori didn’t really care about her pictures, and she had no idea what Hendrix things were off limits. “Thanks and I’ll see you later!” Stacey said as she whisked out the door.

Tori finished unpacking her things but it was tricky stepping over Stacey’s shoes, clothes, and purses that were strewn everywhere. When Tori went to go explore the rest of the apartment she saw that her room wasn’t the only room with pictures of Stacey. Both the hallway and the kitchen walls were plastered with self-portraits. While they were all very professional looking, the amount of them alone caused Tori to raise an eyebrow. Some pictures were also more scandalous than others in their pose and dress, so much so that Tori had to avoid looking at a complete section of the wall in the kitchen when she cooked her dinner that night.

The kitchen was connected to a small living room where two couches sat by a TV. When Tori walked past the TV she saw two things that made her smile. The first was a back patio that opened up to look outside where she could see glimpses of campus, and the second was in the corner of the room behind the couch. There she saw a signed Jimi Hendrix guitar, resting on a small stand to keep it upright! Above the guitar was a poster of him and below the guitar was a big stack of his vinyl albums, perfectly lined up with one another, also signed. Tori had always loved Hendrix growing up and this shrine of his albums and guitar was unbelievable!

She knew this collection had to be worth thousands, so as she backed away she moved the couch a little further from it so it wouldn't bump the guitar if she sat down too fast.

When Tori finished dinner she sat on the couch with a schedule and a map to figure out where her classes were for the next day. She began to hear loud thumping and laughing from apartment above her. She looked up at the ceiling wondering what game could possibly make this much racket and shake the walls that much. As the thumping became louder, the walls began to shake and she heard a crash from the corner. The sound of guitar strings echoed in the room.

"Oh no," thought Tori. When she went to see the guitar it was laying face down. Right as Tori went to pick it up to put it back in its place Stacey walked in.

"What did you do?" whispered Stacey.

As Tori nervously looked for words to explain what happened she looked down at the guitar to see a big crack in the body of it. The shock of this left her speechless.

The room was silent but tense. Thumping and laughing from the apartment above began again and Stacey looked up at ceiling in confusion. After a few seconds the shaking walls caused one of Stacey's precious pictures to fall from the wall and crash onto the floor, glass shattering everywhere as the frame took a few bounces.

Tori, upset but able to speak now, said, "That's what happened." She plopped on the couch and tears sprang from here eyes. This is not how she expected her first night of college to go.

"Oh," was the only thing Stacey could say. Stacey stood up and straightened her American Eagle shirt and Gap pants. "Tori," she said nervously, "I'm sorry, I thought you had been playing with it."

"No," whispered Tori. "I just heard it fall and went to put it back."

"I'm sorry," Stacey eventually said. By the hesitancy in her voice, Tori could tell that those words didn't come out of Stacey's mouth very often.

"It's okay," Tori said, but she still felt shaken up. In an attempt to smooth things over she said, "I might have brought an extra frame with me to college if you want to replace the one that just broke."

"Yeah, sure. Thanks."

With that, Tori stood up and went into her room. It was only the first day of college and nothing had gone as planned.

Word Similarity Task

In this part of the study, we are interested in how similar, associated, or related you perceive various words to be. For each word listed in bold ink, rate how similar, associated, or related it is to each of the words listed below it. Use the following rating scale as a guide to your ratings.

	Not at all Similar, Associated, or Related		Moderately Similar, Associated, or Related		Extremely Similar, Associated or Related
1	2	3	4	5	6 7

**Alley**

animal blood bottle butcher choke drugs fight gun hatchet hurt kill knife

movie night police red rock stick wound

**Animal**

blood bottle butcher choke drugs fight gun hatchet hurt kill knife movie

night police red rock stick wound

**Blood**

bottle butcher choke drugs fight gun hatchet hurt kill knife movie

night police red rock stick wound

**Bottle**

butcher choke drugs fight gun hatchet hurt kill knife movie night police red rock stick wound

**Butcher**

choke drugs fight gun hatchet hurt kill knife movie night police red rock stick wound

**Choke**

drugs fight gun hatchet hurt kill knife movie night police red rock stick wound

**Drugs**

fight gun hatchet hurt kill knife movie night police red rock stick wound

**Fight**

gun hatchet hurt kill knife movie night police red rock stick wound

**Gun**

hatchet hurt kill knife movie night police red rock stick wound

**Hatchet**

hurt kill knife movie night police red rock stick wound

	Not at all Similar, Associated, or Related		Moderately Similar, Associated, or Related		Extremely Similar, Associated or Related
1	2	3	4	5	6 7

**Hurt**

kill knife movie night police red rock stick wound

—————  
**Kill**

knife movie night police red rock stick wound

—————  
**Knife**

movie night police red rock stick wound

—————  
**Movie**

night police red rock stick wound

—————  
**Night**

police red rock stick wound

—————  
**Police**

red rock stick wound

—————  
**Red**

rock stick wound

—————  
**Rock**

stick wound

—————  
**Stick**

wound

—————



## Word Completion Task

1	b_h____	34	sm_ck	67	w__d_w
2	in__re	35	sm__e	68	w__ked
3	ex_e__	36	kn____	69	vis__n
4	mu__er	37	t_ne	70	en_age
5	pr__e	38	s__b	71	scr__n
6	spea_	39	sh_r_	72	h_tr_d
7	fli__er	40	dr__n	73	t_l_ph____
8	expl__e	41	p__ne	74	dis__s_ed
9	w__m	42	ang__	75	c_nt__l
10	ki__	43	fl__t	76	prov__e
11	t_p_	44	fi__t	77	p_nb_ll
12	h_r_	45	p_ck	78	out__e
13	a_t_r	46	ha_e	79	c_ll
14	cho_e	47	a_t	80	r_de
15	s_mp__	48	c_t	81	m_n_ge
16	att_c_	49	w_n	82	ins__
17	c_mp__t	50	a_e	83	s_d__
18	des_____	51	_ry	84	b__t
19	sh_l_	52	wa_	85	br__ze
20	sho_t	53	f_m_	86	rev__t
21	r_p__t	54	sl_p	87	coo_
22	str__e	55	b__k	88	s__y
23	l__e	56	r_pe	89	d__r
24	b_rn	57	fo_e_t	90	sm_ck
25	st_r_o	58	off____	91	fr__t
26	p__son	59	l__on	92	_unch
27	p_st_r	60	cr__l	93	sh_re
28	m__gle	61	c_e_te	94	a_use
29	bl_nd	62	st_r_y	95	cl__r
30	sn_re	63	m_tc_	96	h_nt
31	b_e	64	f_r__	97	w_t_r
32	h_t	65	t__te	98	s_ash
33	g__pe	66	n__t_		

## Demographic Questionnaire

1. What is your gender? Male or Female
2. What is your age? \_\_\_\_\_
3. What is your marital status? Single Married Divorced Widowed Separated
4. What is your ethnicity? \_\_\_\_\_
5. What is your religion?
6. What is your college standing? Freshmen Sophomore Junior Senior

In the following questions circle only one of the numbers on the scale from 1-7.

7. How interesting was this story? Not very Interesting 1 2 3 4 5 6 7 Very Interesting
8. How exciting was this story? Not very Exciting 1 2 3 4 5 6 7 Very Exciting
9. How enjoyable was this story? Not very Enjoyable 1 2 3 4 5 6 7 Very Enjoyable
10. How engaging was this story? Not very Engaging 1 2 3 4 5 6 7 Very Engaging
11. How believable was this story Not very Believable 1 2 3 4 5 6 7 Very Believable
12. How much did you identify with Tori in this story? Not at all 1 2 3 4 5 6 7 Very Much
13. How much did you identify with Stacey in this story? Not at all 1 2 3 4 5 6 7 Very Much
14. How much did you like Tori in this story? Not at all 1 2 3 4 5 6 7 Very Much
15. How much did you like Stacey in this story? Not at all 1 2 3 4 5 6 7 Very Much
16. How similar are you to Tori? Not at all 1 2 3 4 5 6 7 Very Much
17. How similar are you to Stacey? Not at all 1 2 3 4 5 6 7 Very Much
18. How acceptable was the way Tori settled the matter with Stacey?  
Not at all 1 2 3 4 5 6 7 Very Much



## **Debriefing**

In the experiment today you may have read a story containing violence or non-violence. Our actual interest was in seeing how reading violence in literature affects aggressive thoughts. We are sorry that we did not inform you of the complete truth in the beginning but it was necessary to hide the true nature of the study to decrease bias in responding. Now that you have learned the true purpose of the study you can choose to have your results taken out if you wish. Please make it known to the researcher if you would like to withdraw your information from the study at this time.