From Page to Person: Investigating the effects of reading physically violent interactions in literature on high school students' aggressive thoughts

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Abstract

This study investigated the short-term effects of reading literature depicting physical violence, on high school students' aggressive thoughts. While extensive research has explored the impact of media violence on adolescents' behavior and attitudes, literature has received limited attention in this regard. Previous research on media violence has predominantly focused on video games and television, with limited studies specifically addressing the influence of violent literature on aggression. Quantitative data was collected through use of a word completion task to examine the short-term consequences of exposure to physically violent interactions portrayed in literature. Preliminary findings indicated a significant increase in participants' aggressive thoughts after reading literature containing physical violence. The results suggested that exposure to violent content in literature could influence adolescents' cognitive processes, leading to an elevation in aggressive thoughts.

Keywords

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Introduction

The purpose of this study was to examine the short-term effects of reading literature depicting physically violent interactions on high school students' aggressive thoughts. In today's world, media violence's role in shaping adolescents' behavior and attitudes is a topic of extensive research and debate. Researchers have examined several mediums for their role in media violence, such as video games, music, and television (1). Literature, however, which is a more mentally active form of entertainment, has not received the same amount of attention. As teenagers continue to develop personally and socially through reading (2), the effects of exposure to violence in literature on teenagers' aggressive thoughts need investigation.

For the purpose of this study, a physically violent interaction will be defined according to the The World Health Organization (WHO). Accordingly, a physically violent interaction is where a person has "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in, or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (3).

Recognizing the importance of reading, to a teenager's development, the Department for Culture and Media states, "People cannot be active or informed citizens unless they can read. Reading is a prerequisite for almost all cultural and social activities" (4, 5). Reading is an important form of entertainment for teenagers. Despite this importance, it lacks scientific study, where other forms of media have been scrutinized: in examining its impact when depicting physical violence. A study by Felson et. al., concluded that exposure to all forms of violence was associated with an elevated risk for a wide range of mental health problems in children and adolescents, including depression, anxiety, and post-traumatic stress disorder (5). More quantitative data is needed to determine whether high schoolers reading literature depicting physical violence causes increased thoughts of aggression.

Understanding aggression

Craig Anderson and Brad Bushman, developed a General Aggression Model (GAM) in order to explain the effects of exposure to violence on a person's short-term violent thoughts. Like many others focusing on violence in the media, this paper was largely shaped by the General Aggression Model, a theoretical framework developed to explain how various factors in the environment can interact with individual differences to produce aggressive behavior. The model suggests that aggressive behavior results from a combination of inputs, including situational factors, personal characteristics, and cognitive processes (see Figure 1).

In simple terms, these factors fall under a broad category of circumstances that may increase the probability that a person experiences aggressive thoughts. Such influences may include provocation, frustration, and other environmental stressors. The degree of influence of these factors greatly depends on a given person's personality, culture, and biological makeup. Personal qualities are one example of these influences, since individual variances in traits like impulsivity, difficulty controlling anger, and hostility can also increase the probability of aggressive behavior. Cognitive processes, where an individual

processes knowledge and understanding through thought and experience, play a key role in the GAM, as they are thought to mediate the relationship between the situational factors and personal characteristics and aggressive behavior. Overall, these factors indicate that the manner in which people evaluate a particular scenario can affect their emotional response, which can in turn, can possibly affect their behavior (6).
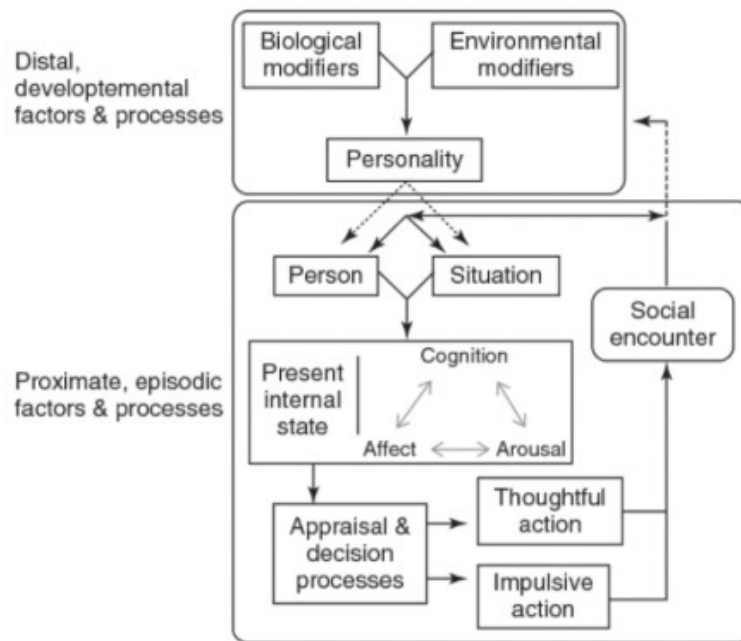

Figure 1: Two main categorical factors influence aggression: distal developmental factors and processes and proximate episodic factors and processes.

It is important to evaluate the prior research on how reading violent literature affects children's behaviors and attitudes, to fully grasp this research question's significance. Although many studies have been conducted on how media violence affects teenagers' attitudes and behaviors, very few studies have specifically examined how the act of reading violent content affects aggression.

Violence in the general media
It is first important to understand the preliminary data stemming from violence in the media. One study in particular, conducted by Gentile et. al., examined the effects of exposure to violent and cartoonish children's games on short-term aggressive behavior on elementary school children and college students who were either assigned to play a children's game with violence or one without violent content. In this task, participants were next asked to set punishment levels that they thought would be delivered to another participant if they lost, based on the Taylor Competitive Reaction Time task where a participant's goal is to click the trackpad button sooner than his or her

opponent after receiving auditory or visual cues. When participants lose, they hear a punishing noise blast at an intensity supposedly set by their opponent. The study's main finding was that playing a violent video game increased the severity of punishments that participants tried to deliver to another person by > 40% (7). A separate study conducted by Anderson et.al. (8) yielded similar results through a meta-analysis, coming to the conclusion that high school students exposed to violent media were more likely to be involved in physical fights and to report feeling angry and aggressive after reading the violent content.

Another study by Anderson et. al., examined the effects of playing video games on undergraduate students' levels of violence. Ten video games were selected by reviewing video game sites on the World Wide Web, popular magazines, and retail outlets and students were allowed to play these games. To subsequently measure violence, the word completion task method was used, which has participants fill in the blanks of missing letters to make complete words. The study concluded that Participants produced a significantly higher percentage of aggressive words after playing violent games (9). The study demonstrated the effects of exposure to violence on young adults after exposure to violence in the media.

Violence in literature
Many researchers chose to use a survey-type method to determine the effects of violence depicted in books. Ferguson et. al., chose a snowball sampling method to determine the effects of reading novels censored for either their violent content or their controversial issues, such as the depiction of sexual content

or racial prejudice, on children aged twelve to eighteen. The participants were asked to identify which books they had read from a list and compare the data to their school and community behavior performance. The study concluded that reading violent and controversial novels was positively associated with civic and volunteering behaviors, possibly because they could foster an open mind, while also being associated with greater degrees of mental health symptoms (10). While this study provided some insights into the effects of reading novels depicting physical violence on children's behaviors and attitudes, it had several limitations. One such limitation was that the study assumed that an increase in adverse mental health symptoms was due to reading violent and controversial novels. That reading such novels could be a consequence of mental health problems was apparently not considered.

In a similar study, Stockdale et. al. studied the effects of aggressive novels on middle schoolers. Through a questionnaire, the aggression levels of each of the middle schoolers was measured through their favorite books, video games, and television shows, concluding that there was a correlation between reading books with violent content and an increase in aggression levels (11). Similarly, Coyne et. al. used an interview method to examine the effects of manga, a type of graphic novel, on aggressive behavior in adolescents at a large midwestern middle school. She collected data by analyzing manga novels participants had read and their favorite books and video games, and subsequently examining their aggression levels. The study concluded that manga readers were more physically aggressive than non-manga readers and also

reported more lonely peer relationships and having smaller friend groups. In addition, reading manga that depicted particularly high levels of aggression was associated with physical aggression even after controlling for media violence exposure in other media (12).

The flaw in Ferguson, Stockdale, and Coyne's research is whether the research is whether aggression is a cause or consequence of reading violent content. Some participants already demonstrating violence may have been attracted to novels containing violence rather than the novels causing the aggression. Although each study addresses these issues as limitations, they fail to determine whether participants were attracted to violent novels, or if the violent content in those novels caused aggressive behavior in the participants. As Ferguson himself contends in a later research study challenging the current theory that violent media makes children more aggressive; laboratory results do not translate into real-world, meaningful effects and much of the present research fails to control other variables, such as mental health and family life, which may have affected the results. He discovered that these other risk factors, rather than video games, are what lead to aggressive and violent behavior in children, making them more likely, in turn, to choose to play violent video games (13).

One research study used the survey-type method that attempted to address the above limitations. Undergraduate students at Wichita State University examined the effects of reading violent texts on psychology majors by examining participants' aggression levels before reading the texts and giving participants a 93-item survey that recorded demographic information, self-reported emotions, and self-reported responses to different situations. After the participants read the texts, they filled out the Anderson State Hostility Scale. The scores on both questionnaires produced an overall hostility score that determined whether the participant felt more or less hostile after reading the chapter. The scores were compared between those that read the violent chapter, and those that read the neutral one. Results indicated that violent literature might have some effect on aggression levels but concluded that their research findings were not statistically significant (14).

Other studies have similarly used interview-type methods to determine the effects of violence in literature. One study conducted by Turkey's ministry of education examined 7th graders before and after reading violent novels such as the novel *Kuklacı*, translated as "The Puppeteer", and *Tom Sawyer*. After the students read the books, the students in the experimental group were given an interview form, and they were asked to express their opinions in writing to determine their thoughts about the books they read and the violent content in these books (15). Similarly, Kirsh et. al. investigated the effects of reading extremely violent versus mildly violent comic books on the interpretation of relational provocation situations. In this study, introductory psychology students read either an extremely violent comic book or a mildly violent comic book. After reading the comic books, participants read five hypothetical stories in which a child provoked a relationally aggressive incident to happen to another child, but the provocateur's motivations were unclear. The participants then answered a series of questions about the provocateur's intent,

potential retaliation toward the provocateur, and the provocateur's emotional state. The researchers concluded that social information processing of relationally aggressive situations was influenced by reading violent comic books, even if the comic books did not contain themes of relational aggression (17, 19). Such studies further primes the need for a quantitative study of literature in high school students, because qualitative studies indicate that university students experience increased aggression when reading aggressive materials. Another research study conducted by Muniz et. al., surveyed parents on their opinions of how violent novels may affect children and found that children are perceived to be impressionable with regard to reading violent content (18).

Other studies have attempted to address this causation *versus* correlation issue through experiment-type methods. Coyne et. al. researched the effects of reading violence by having undergraduate students read a story centered on a physically and relationally violent fight between two roommates. Violence was recorded by observing how participants responded directly after reading the text when faced with an irritating gaming partner in a video game. The study concluded that that participants who read a story depicting physical aggression were much more aggressive than those who read a text containing relative violence (20). In a similar study, Bushman et. al. examined the effects of violent religious scripture on aggression. Participants read the text and subsequently participated in a video game with another participant; with the ability to choose the punishment level through the noise effects of the loser. The study concluded that exposure to scripture violence could cause readers to behave more aggressively (21).

Stevens et. al., conducted a similar study with students at BYU. Participants filled out their demographic information and read the stimulus story, with half of the participants reading a story depicting physical aggression and the other half reading the nonaggressive version of the story. After reading the content, half the participants complete a word completion task and half completed the word-pair association task. All participants then filled out an aggression questionnaire. The researchers concluded that reading violent novels increased aggressive thought in university students (22).

Although some studies, including those by Stockdale et. al. and Coyne et. al., have examined the impact of reading violent books on children's behaviors and attitudes, they have mainly focused on university- or middle-school-level students. They have not specifically examined the short-term effects of physically violent interactive content on high school students. Although Ferguson et. al. did conduct research on students of all ages, his research failed to distinguish between violent literature causing the aggression, or violent children being attracted to violent content novels. Thus the results did not follow from the observations. Hence, studies on high schoolers have not yet been able to distinguish between cause and consequence through an experiment type method. Therefore, a gap in the current body of literature exists regarding research on the short-term effects of reading literature depicting physically violent interactions on high school students' aggressive thoughts. This paper plans to address such a gap by measuring high school students' aggressive thoughts.

Methods

In accordance with the General Aggression Model, developed by Andersen and Bushman, this research study hypothesizes that high school students exposed to literature depicting physically violent interactions will experience increased aggressive thought.

Additionally, based on prior research outcomes on studies examining violent media's impact on young individuals' behaviors and attitudes primarily focused on middle school and university students, this study hypothesized that high school students exposed to literary content depicting physically violent interactions will demonstrate elevated aggression thought levels similar to that of previously studied middle school and college students.

Overview and design

This study implemented a word completion task in order to measure aggressive thought. Researchers have used this method for its validity in assessing constructs such as trait attribution (23, 24). The word completion task has been used as a state-level measure to observe the short-term changes in a given person's aggression levels or personality, and has recently been used to measure state aggression and aggressive thought.

One study by Anderson et. al. (25) used such a task to measure aggressive thought in college students before and after exposure to different degrees of violent lyrics. Due to the similarities between reading and listening to music, this study replicated such a task using the same resources and word completion charts. This method of study was likewise chosen because of its simplicity of application.

Results were coded using quantitative data where *accessibility of aggressive thoughts scores,* such as that used by Anderson et. al. in his study to compare each data piece, was calculated for each participant by dividing the number of aggressive word completions by the total number of completions. A total of 98 words were provided out of which 49 could yield/make (appropriate letters filled in) a violent word. Participant word completions were categorized in four types of words: aggressive words, neutral words, ambiguous words, and non-words. See *Appendix D* for the possible word completions and how they were coded in accordance with Anderson et. al. research materials (25). Participants were given seven minutes to complete as much of the word completion task as they could, in whatever order they chose. Rather than measuring aggression by comparing the different number of words yielded, the number of violent words stemming from the non-violent and violent novels were calculated and compared to yield *accessibility of aggressive thoughts scores,* as calculated by Andersen et. al. in his research (25).

Analyses also thoroughly addressed the completion behavior and its relationship to the presence of aggressive counterparts in the word completion task. This was done in order to gain further insight into participants' response patterns and to ensure that the completion of aggressive words on the word task truly matched with participant aggression, and not on the recall of the words in the text.

To analyze the completion behavior, the percentage of words completed by the participants in both the group exposed to the

violent passage and the group exposed to the nonviolent passage were examined. The objective was to specifically focus on words that had aggressive counterparts in the word bank in order to determine if the presence of aggressive counterparts influenced completion rates or patterns differently between the two groups and hinted towards participants relying on recall.

Participants
Participants consisted of twenty-eight high school students at a small international French private high school in Los Angeles between the ages of thirteen and seventeen. The mean age of participants was 15.136 years old and the standard deviation was 1.077. Fifty percent of participants were female and fifty percent were male. Participants were either recruited in a classroom or a library setting and were randomly assigned to read either a text containing a physically violent interaction or a text that did not contain violent content. There were fourteen participants assigned to each condition: regular text and physical violence.

Dependent variables
Accessibility of aggressive thoughts scores were based on a word completion task consisting of a list of ninety-eight words where one or more letters were missing. When completing this task, participants filled in each of the missing letters to complete the words. The missing letters are strategic and could either correlate with a violent word or with a non-violent word. For instance, as explained by Anderson, "one item is 'explo_e,' which may be completed as 'explore' or 'explode'" (25).

Selected texts
The texts chosen for this study were chosen for a variety of reasons. One text had to have demonstrable violent content, whereas the other had to have very little. They both had to be easy enough for a high school student to comprehend, and both texts had to be approximately the same length. Each text had to have close proximity to the opening chapters of the given novel to avoid participants being confused by a lack of background information in the novel. Therefore, after examining a variety of possibilities, two texts were chosen: a passage from *A Clockwork Orange*, in which a character is beaten for his drunkenness (See Appendix B), and a passage from the novel *The Luxe* (See Appendix A) by Anna Godbersen, in which the protagonist is introduced before entering a ballroom. The novel *The Luxe* was chosen based on Sarah Coyne's examination of physical violence exhibited in each text within the novel, amounting to an average of 0.01 instances of physical violence in the novel, a very minimal amount compared to other children's novels (26). The novel *A Clockwork Orange* was chosen because it has, according to Joseph Darlington at the Oxford University Press, gained a reputation for extreme violence, has appeared on lists of 'banned' works and has even been implicated in copycat crimes (27). Because of the grade levels of the participants, if a word was deemed difficult to understand in either text, the word was replaced with a more modern and common synonym, and indicated through the use of brackets.

To minimize the potential influence of memory associations, the texts, namely *A Clockwork Orange* and *The Luxe*, were carefully considered in relation to the word completion

task. The texts were specifically chosen to ensure that the words present in the texts did not resemble or align closely with the words used in the completion task. Additionally, participants were allowed only 7 minutes of exposure to the words, after which they were promptly removed. This precautionary measure aimed to prevent participants from relying on the texts as a source of cues or clues for completing the word task, thus reducing the likelihood of memory-based influence on the results. These steps were implemented to enhance the robustness of the findings and to minimize potential confounding factors related to memory recall.

Procedure

After reading and signing a consent form, participants were told a cover story in order to disguise the true purpose of the study so as to avoid potential bias in the word completion task. Accordingly, participants were told that the purpose was to determine how reading different types of writing styles affects the way people write. Next, one of the two types of texts were handed out. Participants either read a violent text or a non-violent text.

After finishing the passage, each of the texts were collected and participants each received a word completion task. The participants were then given seven minutes to complete as many words as possible, in no particular order.

Results

The group of students who read the text depicting physical violence produced an average of 21.7 violent words and completed an average of approximately 42 words. In contrast, the group that read the non-violent text produced an average of 12 violent words

and completed an average of 40 words. In the violent text condition, scores were coded through a calculation of the *accessibility of aggressive thoughts scores*. These scores were calculated by dividing the total number of violent words produced by the total number of words completed. In the violent text group, participants yielded a mean *accessibility of aggressive thoughts score* of 0.32. The scores were split between males who received a mean score of 0.34 and females with a mean score of 0.298. The scores were similarly calculated for the nonviolent text condition where participants yielded a mean accessibility *of aggressive thoughts score* of 0.17. Males received a mean score of 0.16 and females received a mean score of 0.18. Figure 2 depicts the *accessibility of aggressive thoughts scores* of both groups and their differences.

Furthermore, results indicated that the group who read the physically violent text produced an average of 22 violent words with 42 words completed. Approximately 72% of the completed words had aggressive counterparts, and all had non-aggressive counterparts. While the non-violent text group produced an average of approximately 12 violent words with approximately 40 words completed. Approximately 63% of the completed words had aggressive counterparts, and all had non-aggressive counterparts.

Accessibility of Aggressive Thoughts Scores
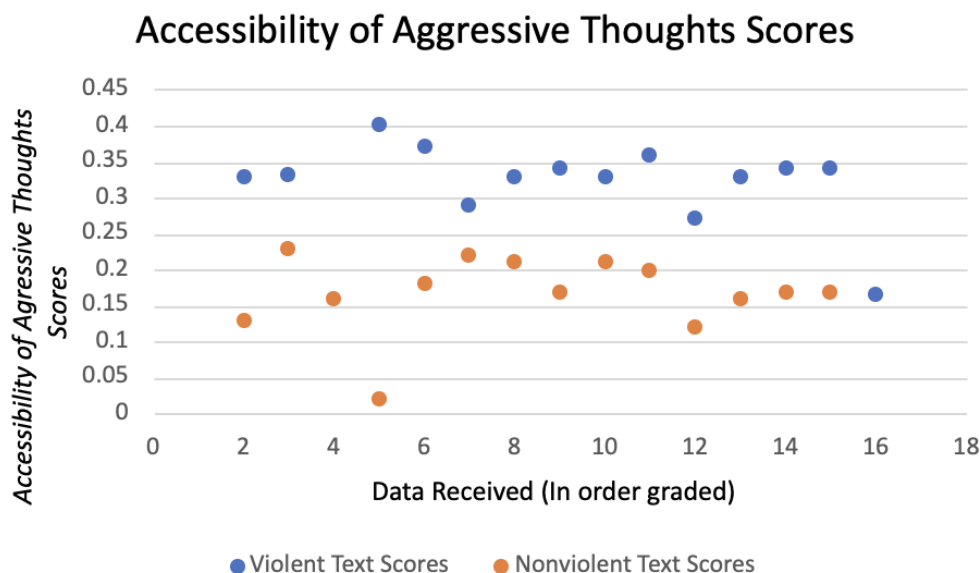
Figure 2: The accessibility of aggressive thoughts scores

Discussion

This study's main goal was to test the hypothesis that when high schoolers read texts depicting physical violence it primes aggressive thoughts. The mean score of participants who had read the violent text was compared to the corresponding mean of those who had read the nonviolent text.

According to preliminary analyses, participant sex had no influence on the measure of the *accessibility of aggressive thoughts scores*. However, the participants who read the violent book had indicated significantly higher *accessibility of aggressive thoughts scores* with a mean score of 0.32, than those who read the nonviolent book who received a mean score of 0.17. The study's results indicated a statistically significant difference in the accessibility of *aggressive thought scores* between the violent

text group (M_1 = 0.32, Standard Deviation= 0.058) and the non-violent text group (M_2 = 0.17, Standard Deviation = 0.053).

To confirm the significance of this data, the p-value –used in statistics to analyze the difference between the means of two or more groups– was calculated and yielded results where $p < 0.0001$, indicating that there was a 0.01% probability that those particular results could be obtained by chance alone; or in other words, there was a 0.01% probability of incorrectly rejecting the null hypothesis. The results were hence considered highly significant at the level of $p < 0.0001$.

These results support the hypothesis that exposure to violent content in books increases the *accessibility of aggressive thought scores* and, by extension, increases aggressive thought. This study's findings are therefore

consistent with earlier studies in the area, which have shown that exposure to violent media content can raise aggressive thought levels. Reading texts depicting physical violence may trigger aggressive thoughts.

With regard to the analysis of participants' response patterns in order to ensure that the completion of aggressive words on the word task truly matched with participant aggression and not recall of the words in the text, both groups completed an approximately statistically equal amount of words in the word completion task. Furthermore, the group who read the violent passage completed a larger percentage of words for which their aggressive counterparts existed (72%). Participants reading the neutral text completed a lesser percentage of words for which their aggressive counterparts existed (63%). This analysis provides valuable insight into participants' completion behavior and suggests that their word choices were likely a true reflection of being influenced by aggressive thoughts and not solely driven by recall, memory or vocabulary.

Implications

The implications of this study are valuable for educators, parents, and policymakers to consider when choosing books or creating rules for media consumption among high schoolers. The community can make decisions to promote a healthier and more positive reading environment for high schoolers by understanding the potential impact of violent content in books on teenagers' aggressive thoughts. This study also underlines how crucial it is to include books and other textual forms of content in media violence research in addition to more traditional media like television and video games.

Limitations

The purpose of this study was to examine the short-term effects of reading physically violent interactions depicted in texts on aggressive thought rather than long-term aggressive thought, and the measure of aggressive thoughts was taken immediately after reading. As such, the study did not explore potential mediators or moderators of the relationship between exposure to books depicting physically violent interactions and aggressive thoughts. Thus, no direct long-term effects can be interpreted from this study.

Furthermore, although the word completion task may reveal a person's mental patterns and associations, the outcomes of such a study may also be affected by a variety of other factors, including an individual's pre-existing views and beliefs, their emotional state, and the environment in which the activity is conducted. Although this study was able to realize and gather evidence pointing towards increased high school students' levels of aggressive thought after reading physical violence depicted in texts, time limitations prevented acquiring additional data that could help further alleviate such limitations.

Another key limitation originates from the observation that thoughts and actions are not always closely related. Although according to the GAM such an increase in emotional response can influence behavior, this study only measured aggression in thought and not actual aggressive behavior, and thus cannot comment on the effects of such an experiment on behavior.

The variation in reading comprehension and engagement levels posed another significant limitation to understanding how exposure to violent literature affects high schoolers' increase in aggressive thoughts through reading texts. Although the narratives were carefully chosen in order to optimize participants' understanding and absorption in the content and cater to a wide variety of reading skills and providing modern synonyms for complex words in order to lessen this problem, it remained an important limitation: not all participants may have understood the texts similarly or uniformly.

The reliance on the word completion task to assess aggressive thoughts in this study also resulted in an important limitation. In the context of this study, participants might recall the words from the violent texts and fill them in during the word completion task, leading to an overestimation of aggressive thoughts; although care was taken to dissociate the words in the completion task from being similar to any of the words encountered in any of the two texts. Nevertheless, memory associations or vocabulary knowledge could potentially play a role in the observed increase in reported aggressive thoughts.

Another important aspect to consider was the variation in the number of words provided by different participants throughout the study. It was observed that participants from both groups generally provided a similar number of word completions. However, it is worth noting that some individuals seemed to provide a greater number of words compared to others. This difference in word count could potentially indicate the presence of memory associations. This variability in word count highlights the possibility that memory associations could play a role in shaping the reported increase in aggressive thoughts.

Another limitation of the present study was its relatively small sample size and the fact that it was conducted in only one school, which limits the ability to generalize these findings. Hence, larger and more varied samples for future studies would be beneficial. In a larger sample size, it may also be productive to compare potential disparities in how violence in literature affects aggressive thought among other demographic groups and will strengthen the results' external validity. These tests and experiments should ideally be conducted in a range of academic or recreational settings. Additionally, if such a study were conducted in a more diverse environment, it might also highlight any cultural variations in how distinct people interpret and respond to violent content in books and texts.

A final limitation in this research is its choice of text materials. *A Clockwork Orange* was chosen as the textual material to observe aggressive thoughts following exposure to physically violent interactions. The novel's explicit and vivid depiction of violence made it practical for measuring the relationship between exposure to narratives depicting physically violent interactions and subsequent aggressive thought. However, the degree of violence in *A Clockwork Orange* may limit the applicability of the study's findings because there is a notable difference between the violence exhibited in *A Clockwork Orange* and the violence typically encountered in other books that teenagers read more commonly. Further research should thus explore less extreme examples of violent content.

Future direction

Future studies could contribute to closing the current gap by taking into account the constraints that have been recognized. One of this study's main limitations is its emphasis on the immediate consequences of reading physically violent books. Therefore, future studies addressing the long-term effects of exposure to violent novels on aggressive thoughts of behavior may find it beneficial to implement study designs where participants are followed over a period of time to address this limitation, thus making it possible to examine whether the short-term effects that were seen in this study also have long-term repercussions.

Given the drawbacks associated with using *A Clockwork Orange* in the study, it would also be an appropriate future direction to investigate the connection between exposure to violent content and aggressive thoughts using a variety of texts with varying levels of violence. The results might provide a greater understanding of the effects that varying levels of violent content may have on readers if they included a more varied sample of narratives. Such a measure would help address the limitations that are associated with the extremeness of the violence in *A Clockwork Orange.* Results from such a study would indicate if the correlation was discrete and categorical, and at what level of violent content it manifested.

Finally, future research should allocate sufficient time to collect additional data in order to measure aggression levels rather than aggressive thought. This data could include emotional and physiological metrics to better understand the underlying mechanisms through which violent content in books influences aggression. Additionally, incorporating follow-up assessments would enable researchers to examine the stability of the observed effects and investigate potential changes in aggressive thoughts and behaviors over time.

Addressing these limitations in future research will both contribute to the existing body of literature and will also inform the development of evidence-based strategies to promote responsible media consumption.

Conclusion

This paper investigated the impact of exposure to a physically violent interaction content in books on high schoolers' aggressive thoughts. Results indicated that reading a text detailing a physically violent interaction increased high schoolers' aggressive thoughts, as measured by the number of violent words produced in a word completion task. These results support the hypothesis and bring about new understanding that reading passages depicting physical violence significantly increases the prevalence of short-term aggressive thoughts in high schoolers. These results add to the body of knowledge on media violence and aggression and highlight the need to take into account how violent content in books may affect young readers' aggressive thoughts.

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APPENDICES

APPENDIX A: *The Luxe Text*

"THE RICHMOND HAYES FAMILY REQUESTS THE PLEASURE OF YOUR COMPANY AT A BALL IN HONOR OF THE ARCHITECT WEBSTER YOUNGHAM ON THE EVENING OF SATURDAY THE SIXTEENTH OF SEPTEMBER AT NINE O'CLOCK AT THEIR NEW RESIDENCE NO. 670 FIFTH AVENUE IN THE CITY OF NEW YORK"

COSTUMES ARE REQUIRED

"THEY HAVE ALL BEEN ASKING FOR YOU," LOUISA Holland told Elizabeth, quietly but firmly."

Elizabeth had spent eighteen years being groomed as her mother's prized asset and had become, among other things, an expert interpreter of her tones. This one meant Elizabeth was to return to the main ballroom and dance with a partner of her mother's choosing at once, most likely a young man of enviable, if slightly inbred, lineage. Elizabeth smiled apologetically at the girls she had been sitting with—Annemarie D'Alembert and Eva Barbey, whom she had met that spring in France and who were both dressed as courtesans from the Louis XIV era. Elizabeth had just been telling them how very far away Paris seemed to her now, though she had only stepped off the transatlantic steamer and back onto New York soil early that morning. "Her old friend Agnes Jones had been perched on the ivory-and-gold striped damask love seat as well, but Elizabeth's younger sister, Diana, was nowhere to be seen. Most likely because she suspected that her behavior was being monitored, which, of course, it was. Elizabeth's irritation at the persistent childishness of her younger sister flared up, but she quickly banished the feeling.

"After all, Diana hadn't enjoyed the formal cotillion debut that Elizabeth had two years ago, just after her sixteenth birthday. For the elder Holland sister there had been a year with a finishing governess—she and Penelope Hayes had shared her, along with various tutors—and lessons in comportment, dance, and the modern languages. Diana had turned sixteen last April with no fanfare during Elizabeth's time abroad. The family had still been in mourning for their father, and a big to-do had not seemed appropriate. She had simply started attending balls with Aunt Edith in Saratoga during their summer stay there, so she could hardly be held responsible for seeming a little rough."

"I'm sure you are sorry to leave your friends," Mrs. Holland said, steering her daughter from the feminine hush of the parlor and into the main ballroom. Elizabeth, in her shepherdess's costume of white brocade, looked especially bright and especially tall next to her mother, who was still wearing her widow's black. Edward Holland had passed away at the beginning of that year, and her mother would be in formal mourning for another year at least.

sourced from: Godbersen, A. (2018). *The Luxe*. Harper Teen, an imprint of HarperCollins Publishers.

APPENDIX B: *A Clockwork Orange* **Text**

When we got outside of the Duke of New York we [watched] by the mainbar's long lighted window, a burbling old pyatnitsa or drunkie, howling away at the filthy songs of his fathers and going blerp blerp in between although it might be a filthy old orchestra in his stinking rotten guts. One [thing] I could never stand was that. I could never stand to see a [mess] all filthy and rolling and burping and drunk, whatever his age might be, but more especially when he was real starry like this one was. He was sort of flattened to the wall and his platties were a disgrace, all creased and untidy and covered in [feces] and mud and filth and stuff. So we got hold of him and cracked him with a few good horrorshow [punches], but he still went on singing.

The song went:

And I will go back to my darling, my darling,
When you, my darling, are gone.

But when Dim fisted him a few times on his filthy drunkard's rot he shut up singing and started to creech: "Go on, do me in, you bastard cowards, I Don't want to live anyway, not in a stinking world like this one." I told him to lay off a bit then, because it used to interest me sometimes to slooshy what some of these starry decrees had to say about life and the world. I said: "Oh. And what's stinking about it?"

He cried out: "It's a stinking world because it lets the young get on to the old like you done, and there's no law nor order no more." He was screeching out loud and waving his rookers and making real horrorshow with the slovos, only the odd blurp blurp coming from his [guts], like something was orbiting within, or like some very rude interrupting sort of a moodgemaking a [noise], so that this old [man] kept sort of threatening it with hisfists, shouting: "It's no world for any old man any longer, and that means that I'm not one bit scared of you, my boys, because I'm too drunk to feel the pain if you hit me, and if you kill me I'll be glad to be dead." We smecked and then grinned but said nothing, and then he said: "What sort of a world is it at all? Men on the moon and men spinning round the earth like it might be midges round a lamp, and there's not more attention paid to earthly law nor order no more. So your worst you may do, you filthy cowardly hooligans."

Then he gave us some lip-music—"Prrrrzzzzrrrr"—like we'd done to those young millicents, and then he started singing again: Oh dear dear land, I fought for thee And brought thee peace and victory— So we cracked into him lovely, grinning all over our [faces], but he still went on

singing. Then we tripped him so he laid down flat and heavy and a bucket load of beer-vomit came whooshing out. That was disgusting so we gave him the boot, one go each, and then it was blood, not song nor vomit, that came out of his filthy old rot. Then we went on our way.

sourced from: Burgess, A. (2019). *A Clockwork Orange*. W. W. Norton & Company.

APPENDIX C: Word Completion Task

Code #_____ Grade_____ Age_____ Gender_____

1 b _ h _ _ _	22 s t r _ _ e	43 f l _ _ t
2 i n _ _ r e	23 l _ _ e	44 f i _ _ t
3 e x _ e _ _	24 b _ r n	45 p _ c k
4 m u _ _ e r	25 s t _ r _ o	46 h a _ e
5 p r _ _ e	26 p _ _ s o n	47 a _ t
6 s p e a _	27 p _ s t _ r	48 c _ t
7 f l i _ _ e r	28 m _ _ g l e	49 w _ n
8 e x p l _ _ e	29 b l _ n d	50 a _ e
9 w _ _ m	30 s n _ r e	51 _ r y
10 k i _ _	31 b _ e	52 w a _
11 t _ p _	32 h _ t	53 f _ m _
12 h _ r _	33 g _ _ p e	54 s l _ p
13 a _ t _ r	34 s m _ c k	55 b _ _ k
14 c h o _ e	35 s m _ _ e	56 r _ p e
15 s _ m p _ _	36 k n _ _ _	57 f o _ e _ t
16 a t t _ c _	37 t _ n e	58 o f f _ _ _
17 c _ m p _ _ t	38 s _ _ b	59 l _ _ o n
18 d e s _ _ _ _	39 s h _ r _	60 c r _ _ l
19 s h _ l _	40 d r _ _ n	61 c _ e _ t e
20 s h o _ t	41 p _ _ n e	62 s t _ r _ y
21 r _ p _ _ t	42 a n g _ _	63 m _ t c _

64 f _ r _ _

65 t _ _ t e

66 n _ _ t _

67 w _ _ d _ w

68 w _ _ k e d

69 v i s _ _ n

70 e n _ a g e

71 s c r _ _ n

72 h _ t r _ d

73 t _ l _ p h _ _ _

74 d i s _ _ s _ e d

75 c _ n t _ _ l

76 p r o v _ _ e

77 p _ n b _ l l

78 o u t _ _ _ e

79 c _ l l

80 r _ d e

81 m _ n _ g e

82 i n s _ _ _

83 s _ d _

84 b _ _ t

85 b r _ _ z e

86 r e v _ _ t

87 c o o _

88 s _ _ y

89 d _ _ r

90 s m _ c k

91 f r _ _ t

92 _ u n c h

93 s h _ r e

94 a _ u s e

95 c l _ _ r

96 h _ n t

97 w _ t _ r

98 s _ a s h

APPENDIX D: Scoring Word Completion Task

Coding Key for the Word Completion Task

Item #	Neutral	Ambiguous	Aggressive	Non-Words
1)	behind		behead	
	behave			
	Bahama			
	behold			
	behalf			
	behest			
2)	insure		injure	infere
	ensure			indure
	endure			
3)	exceed			expell
	expect			
	extent			
	extend			
	except			
	excess			
	expert			excell
	expend			
	extern			
	excels			
4)	mutter		murder	muller
	muster		mugger	mudder
				multer
				murmer
5)	pride			prode
	prime			prise
	prize			
	prude			
	prove			
	price			
	prune			
	prose			
	probe			
6)	speak		spear	
7)	flipper			
	flitter			
	flicker			
	flirter			
	flivver			
8)	explore		explode	

Item #	Neutral	Ambiguous	Aggressive	Non-Words
9)	warm		wham	
	worm			
	whim			
	whom			
10)	kite		kick	
	kiss		kill	
	kilt			
	king			
	kids			
	kind			
	kiwi			
	kink			
	kilo			
11)	tape			topo
	type			tups
	tips			
	tops			
	taps			
	tope			
	typo			
12)	hare	hurl	hurt	
	hire		harm	
	hard			
	here			
	hers			
	hero			
	have			
	horn			
	hark			
13)	after			
	alter			
	aster			
	actor			acter
	altar			
14)	chore		choke	
	chose			
15)	sample			
	simple			
	simply			
	simper			
16)	attach		attack	
	attics			

Item #	Neutral	Ambiguous	Aggressive	Non-Words
17)	compact compost comport	complot		compeat compart
18)	dessert desires deserve destiny desired designs despair despite descent descend desktop	deserts	destroy despise	despire deshell desiree
19)	shale shall shelf shell shalt shill			shole
20)	short		shoot shout	
21)	repeat report repent		rapist	raport
22)	strife stroke stripe strive stride		strike	

Item #	Neutral	Ambiguous	Aggressive	Non-Words
23)	line	lure		
	lyre			
	lore			
	love			
	live			
	lose			
	lone			
	like			
	life			
	lake			
	lane			
	lime			
	lope			
	laze			
	lace			
	lame			
	lice			
	late			
24)	born		burn	
	barn			
25)	stereo			
	sterno			
26)	person		prison	
			poison	
27)	poster	pester		
	pastor			
28)	mingle		mangle	
	muggle			
29)	blind			
	blond			
	blend			
	bland			
30)	snore		snare	
31)	bye			
	bee			
32)	hat		hit	
	hut			
	hot			

Item #	Neutral	Ambiguous	Aggressive	Non-Words
33)	grape grope	gripe		
34)	smock		smack	smuck
35)	smile smoke		smite	smere smore
36)	kneel known knits knees knack kneed	knave knock	knife	
37)	tone tune	tine		
38)	saab slab scab stub	snob slob	stab snub	
39)	short shore share shirt shirk	shark sharp		
40)	drain drawn		drown	
41)	plane prone prune phone			
42)	angel angle anglo		anger angry	
43)	flirt fleet float flint			
44)	first filet		fight	

Item #	Neutral	Ambiguous	Aggressive	Non-Words
45)	pack pick puck peck			
46)	hare have hale	haze	hate	
47)	ant act art apt			
48)	cat cot		cut	
49)	won win wan			
50)	ate ale are age ace aye awe	ape		axe ave
51)	try cry dry fry wry	pry		
52)	was way wax wad wag wan		war wap	wat
53)	fame		fume	
54)	slip slop		slap	

Item #	Neutral	Ambiguous	Aggressive	Non-Words
55)	book	bark		
	back	balk		
	beak			
	buck			
	bank			
	bunk			
56)	ripe		rape	
	rope			
57)	forest		foment	
58)	offset		offend	
	offers			
	office			
59)	lemon			licon
	logon			
60)	crawl		cruel	
61)	create			
62)	starry	stormy		
	sturdy			
63)	match			
	mitch			
64)	furry		force	faves
	forty	fires	fired	firey
	farms			
	first			
	forks			
	forge			
	forms			
	forth			
	fares			
	ferry			
	farts			
	forum			
	forgo			
	farse			
	forte			
65)	taste			teste
	trite			

Item #	Neutral	Ambiguous	Aggressive	Non-Words
66)	nifty ninth nutty nests newts north		nasty	ninty
67)	window			
68)	winked worked walked		wicked	
69)	vision			
70)	engage		enrage	
71)	screen			
72)	hotrod		hatred	
73)	telephone			telophase
74)	dismissed discussed	disgusted		disensued
75)	central control			
76)	provide		provoke	provise
77)	pinball			
78)	outcome outside outline outdate	outdone	outrage	
79)	call	cell		
80)	rode ride		rude	
81)	manage			

Item #	Neutral	Ambiguous	Aggressive	Non-Words
82)	insect	insist	insult	
	insure			
	inside			
	insert			
	insane			
	insole			
	instep			
83)	side			sade
	soda			
	suds			
84)	bolt	boot		
	bait	butt		
	boat		beat	
	bunt	belt		
	blot	bust		
	beet	brat		
	bout			
	best			
85)	bronze			
	breeze			brouse
86)	revert	revolt		revent
87)	cool			
	cook			
	coon			
	coop			
88)	sony		slay	
	stay			
	sway			savy
	sexy			
	spry			sasy
89)	deer			
	door			
	dear			
	dour			
90)	smock		smack	smuck
91)	fruit			
	front			
	frost			

Item #	Neutral	Ambiguous	Aggressive	Non-Words
92)	lunch munch bunch hunch		punch	
93)	shore share			
94)	amuse		abuse	acuse
95)	clear			
96)	hint	hunt		
97)	water			
98)	stash swash		slash smash	