

The Appeal of Media Violence in a Full-length Motion Picture: An Experimental Investigation

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This paper reports the results of an experiment that examined the appeal of violence in a full-length motion picture. College students (N = 134) were randomly assigned to view one of two different versions of The Fugitive. One version was the original theatrical release and the other version was identical except for the fact that nearly all of the scenes of violence were deleted. Deleting the violence did not affect enjoyment or perceptions of the quality of the movie. The popular assumption that violence is an enjoyable film commodity is suspect based on these results.

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Nearly a decade ago, George Gerbner made the following comment about media violence in an instructional video, *The Killing Screens* (Jhally, 1994):

Why is it [violence] so pervasive? Many people say, 'well that's what the people want and that is because it is very popular'. That is not so. Violence, in itself, is not a popular commodity. To be sure there are some good stories and some very strong stories that have a lot of violence, but their popularity does not rest in the violence. Most of the highly rated programs on television are non-violent.

Gerbner explained that the pervasiveness of violence in movies and TV programs has much more to do with its easy global marketability than it does with its inherent appeal or attractiveness to audiences. While humorous media content is often difficult to produce and is often misunderstood when it travels across cultures, violence is relatively

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cheap to produce and communicates in a universal language. While Gerbner acknowledges that violence 'livens up' a dull program, he argues that it is not an enjoyable form of content for its own sake.

While there is no particular reason to question Gerbner's analysis about the general appeal of media violence except for the fact that violence continues to be a staple of media content (Signorielli, 2003; Smith, Nathanson, & Wilson, 2002), it is remarkable that so little research attention has been devoted to studying the extent to which violence contributes to the enjoyment of media entertainment. Part of the explanation for the lack of research on this topic probably has to do with the fact that researchers have been preoccupied with documenting the prevalence of violent media content (Gerbner, Gross, Morgan, & Signorielli, 1994) and the potential negative consequences of viewing media violence (see Sparks & Sparks, 2002 for a review of this literature). However, given the past research indicating that viewing media violence is causally related to subsequent aggressive behavior (see Sparks & Sparks, 2002), it seems important to understand more about the particular dynamics involved in viewing violence. If, for example, media violence is not particularly enjoyed for its own sake, this would suggest that viewing of violence along with its negative effects on aggression could be curtailed without sacrificing viewer enjoyment.

Despite the fact that little systematic research exists on the appeal of media violence, some researchers have presented evidence that would appear to challenge the notion that violence is enjoyable in and of itself. Diener and DeFour (1978) reported that the correlation between the national Nielson ratings and amount of violent content for a total of 62 episodes over 11 different programs was nearly zero ($r = .05$). Similarly, Cantor (1998) observed that the 1995 Nielson ratings revealed that children between the ages of 2–11 years preferred to watch situation comedies rather than violent cartoons. She observed that, 'In evaluating the popularity of violent programming, it is important to keep in mind that there are other types of offerings that are even more popular with children' (p. 96). Consistent with Cantor's observation, Goldstein (1998) pointed out much the same thing with respect to adult viewers: 'It is worth remembering that violent entertainment is the preferred form of entertainment only for a minority of the general audience. Most viewers appear to prefer comedies and sitcoms to violent entertainment'.

While prominent researchers like Gerbner, Cantor, and Goldstein clearly suggest that violence is not particularly popular, few studies have attempted to directly explore the extent to which violence might contribute to enjoyment in a program or movie. One recent meta-analysis on the effects of media ratings (Bushman & Cantor, 2003) revealed that ratings of violence tended to cause potential viewers to become more attracted to the material, but this finding does not rule out the possibility that viewers use the violent rating to infer the presence of other sorts of non-violent content (e.g., sex or exciting action) to which they are attracted. Two notable exceptions from most studies on the appeal of violence (published 20 years apart) reported data from experimental investigations that were designed to determine if violent versions of media presentations were enjoyed more than their non-violent counterparts (Berry, Gray, & Donnerstein, 1999; Diener & DeFour, 1978). Both of these experiments found evidence

in favor of the notion that violent content fails to contribute to the enjoyment of a program or movie. Taken together, the available data seems to point consistently against the idea that media violence is an enjoyable commodity.

If, in fact, it turns out that media violence is not enjoyable in and of itself, how does one account for its continued prevalence in mainstream entertainment? Sparks and Sparks (2000) provided an analysis of the appeal of media violence that offered several plausible accounts for its enjoyment that do not involve the enjoyment of violence per se. For example, these authors pointed out that violence could be confounded with other variables like production quality or sexual content. Alternatively, viewers might experience a number of post-viewing gratifications such that they report enjoyment of a program or movie even though the violent content itself was not experienced as pleasurable. One example of this possibility involves excitation transfer (Zillmann, 1978). If violent content triggers arousal and a particular plot-line is resolved favorably, viewers might experience a sense of relief that is intensified by residual excitation. According to the theory, since arousal intensifies any emotion and decays slowly, any new emotion will be more intense than it ordinarily would be if it occurs during the time when arousal from a prior event has not fully decayed. Thus, arousal from a violent film might intensify feelings of relief following the film and cause it to be recalled as particularly pleasant even though the violence itself was not enjoyable. Of course, it is also possible that violence may trigger negative emotions in some viewers such as disgust, anxiety and upset. These emotions may sustain themselves even after viewing is finished.

Because of the continued prevalence of media violence and because the available data on the enjoyment of violence appears to be relatively sparse, we sought to continue the brief tradition of experimental studies in this area by manipulating the amount of violence in a full-length movie and investigating post-viewing ratings of enjoyment. Earlier studies that have taken this approach have used manipulations that are not radically different with respect to the amount of violence in the edited and un-edited conditions. For this study, we sought to create a manipulation by removing a substantial amount of violence in a motion picture such that the two versions were clearly very different with respect to violent content, yet unaffected in terms of the plot-line and comprehensibility of the story. We pursued this strategy in order to give every opportunity for an effect of the manipulation to work with respect to differential levels of enjoyment. That is, if violence contributes to the enjoyment of a movie, then removing virtually *all* of the violence in a violent film should maximize the chances of being able to observe this effect. Of course, in removing so much violence, we were concerned about destroying the comprehensibility, aesthetics and general flow of the film. As such, we were careful to find a movie (*The Fugitive*) where it seemed at least possible to remove the violence without disturbing these other elements of the film. Ultimately, our success in achieving these goals was an empirical question. Despite the prior research suggesting little or no relationship between violent content and enjoyment, we were still unconvinced that by pursuing the strategy that we did in this study, we would be unable to document some relationship between viewing violence and enjoyment of a motion picture. As such, we advanced the following research question: RQ1: What is

the effect of removing violence from a full-length movie on subsequent ratings of enjoyment of the movie?

Method

Overview

Respondents were exposed to one of two versions of a full-length Hollywood film. One version was kept in its original form, while the other was edited to remove violence. After viewing the film, respondents rated the film on a variety of questions that were subsequently converted to scales, including overall enjoyment, desire to see the movie again, degree of entertainment, how much fun it was to watch, as well as a number of other measures of the perceived quality of the movie and perceived violence.

Respondents

A priori power analysis was performed to determine the number of respondents necessary to detect a moderate effect size at the standard $\beta = .80$ level (Cohen, 1977). The number of respondents necessary to detect a moderate effect size in an independent sample *t*-test is 64 per sample; the number of respondents necessary for a 2×2 ANOVA is 33 per cell. Therefore, the experiment included a total of 134 respondents who were undergraduates at a large Midwestern university (41 males, 93 females). All participants received credit for completing a research requirement in a communication course in return for their participation in the study. While we did not measure age or ethnicity, the majority of the participants were Caucasian and ranged between 18–22 years of age.

Procedure

The experiment was conducted in a 70-seat classroom with a 7' \times 7' movie screen. After respondents signed up for the experiment they were randomly assigned to one of the two film versions and were instructed to report to the viewing room at an assigned time (*original film version*: males = 15, females = 51; *edited film version*: males = 26, females = 42). In order to minimize the possibility that participants talked about the experimental session to other potential participants prior to their participation, the two conditions were run consecutively on the same evening. This pattern was repeated two times in different semesters in order to include sufficient numbers of participants. Each viewing session lasted approximately 2 hours. The respondents were told that the purpose of the experiment was to study reactions to a full-length feature film because much of the existing research had relied upon shorter film clips. After reading an informed consent statement, participants were invited to sign the statement indicating their desire to continue with the study or to withdraw their participation without penalty. All participants agreed to watch the movie.

In order to prevent respondents from influencing each other's opinions, we asked them not to talk during the film. Although it is still possible that viewers might influence

other audience members' reactions during the film (by laughing, etc.), this influence was perceived to be no greater than it might be under real viewing conditions. After the film, the participants completed a film evaluation questionnaire, were thanked for participating and dismissed. Complete results of the study and a thorough debriefing took place in the context of a regular class meeting in the course from which the participants were drawn.

Experimental Manipulation

The film employed was the action film, *The Fugitive*. This film is about a doctor who is wrongly convicted of murdering his wife. The un-edited version of the film ran for 2 hours, 11 minutes and 5 seconds and contained about 104 separate acts of physical violence. An edited version of the film was created to remove as much violence as possible without affecting the storyline. This was accomplished by digitizing the film and editing it precisely on an Apple computer using Adobe Premiere software (Version 6.5). Violent scenes were abundant throughout the film and were removed. The edited version of the film lasted 2 hours, 0 minutes and 49 seconds. Thus, we removed just over 10 minutes of violent material. A pilot study was conducted involving 19 participants (edited version: $N = 10$; unedited version: $N = 9$) who had never seen the film. These participants also received course credit for their participation and came from the same population of students that was used for the main study. After viewing, they completed rating scales about their perceptions of the film's quality and were asked about continuity and whether they perceived any manipulation in the film. None of the participants who saw the edited version reported that they were aware of the editing. Moreover, inspection of the means on the various rating scales of the quality of the movie revealed that the two groups perceived the film in the same way. Based on these results, we concluded that we successfully removed the violence without arousing any suspicion that the film had been edited.¹

Measurement

The first questions on the post-viewing questionnaire were designed to disguise the true purpose of the experiment. Instead of focusing immediately upon the participant's enjoyment of the movie, participants were asked to respond to eight questions that asked for specific details from the film (e.g., 'What was the last name of the doctor who was convicted of murdering his wife?', 'How many people were killed in the train crash at the beginning of the movie?'). Additional questions included a series of 18 items on 7-point scales that were designed to assess various perceptions of the film including enjoyment (4 items; $\alpha = .87$), suspense (2 items; $\alpha = .70$), comprehensibility (3 items; $\alpha = .69$) and overall quality (4 items; $\alpha = .71$). Respondents answered two additional questions assessing perceived violence and estimated number of violent acts in the movie after being instructed that a single scene might contain multiple aggressive acts and to count a single punch as one aggressive act.

Results

Because of the potential transparency of the experimental design, we were concerned about the possibility that participants might guess what the experiment was about while they were answering the post-viewing questions. Consequently, we first examined responses to a hypothesis-guess question to see if there was any basis for this concern. Only seven of the participants indicated that they thought the experiment involved some sort of editing of the film to test differences in perceptions of the movie. Consequently, we eliminated these 7 participants from all subsequent analyses. The final design of the experiment included 64 participants who watched the original version of the movie (males: $N = 15$; females = 49) and 63 participants who watched the edited version of the movie (males: $N = 24$; females = 39).²

Manipulation Check

In order to determine if the manipulation of violent content was successful, a 2×2 ANOVA (Version \times Sex) was conducted on participants' estimates of the total number of acts of violence in the movie as well as their ratings on a 7-point scale of violent content. On both variables, the results indicated that the manipulation produced significant main effects on the perception of violent content. Participants in the edited version of the movie ($M = 42.21$, $s.d. = 55.72$) estimated fewer acts of violence in the film than those who saw the uncut version of the movie ($M = 89.27$, $s.d. = 138.70$) [$F(1, 122) = 4.69$, $p < 0.05$; partial $\eta^2 = .04$].³ Similarly, participants in the edited version of the movie ($M = 4.35$, $s.d. = 1.32$) rated the movie as being significantly less violent than those who saw the uncut version of the film ($M = 5.08$, $s.d. = 1.34$) [$F(1, 123) = 5.00$, $p < 0.05$; partial $\eta^2 = .04$]. There were no significant differences by sex or significant interactions between version and sex for these analyses.

While the manipulation of violence was apparently successful, we were concerned that the editing of the movie may have affected perceptions of the film's quality such that the edited version of the movie might not be enjoyed as much as the violent version due to factors having little to do with the violence per se. Therefore, we conducted a 2×2 ANOVA (Version \times Sex) on our measures of comprehensibility (e.g., ease of following events, smooth flow of scenes) and overall quality (e.g., editing, photography, music, effects). We found no significant differences on comprehensibility or overall quality by condition, sex, or the interaction of the two variables. Table 1 displays the ANOVA results and Table 2 displays the means associated with all analyses. Overall, it appears as if we managed to edit out the film's violence without affecting perceptions of the film's quality.

Preliminary Analyses

We were concerned about the possibility that prior exposure to the movie might affect responses to the film, particularly in the edited version. About two-thirds of the participants ($N = 93$) indicated prior exposure to the movie. Consistent with expectations

Table 1 Analysis of Variance for Version and Sex of *The Fugitive*

Dependent Variable	Factors	F	d.f.	η^2
Violence Rating	Version	5.00*	1, 123	.04
	Sex	2.27	1, 123	.02
	Interaction	.80	1, 123	.01
Violent Acts Estimation	Version	4.69*	1, 122	.04
	Sex	.47	1, 122	.004
	Interaction	.001	1, 122	.00
Comprehensibility	Version	1.06	1, 123	.009
	Sex	.70	1, 123	.006
	Interaction	1.14	1, 123	.01
Quality	Version	1.24	1, 122	.01
	Sex	.05	1, 122	.00
	Interaction	.002	1, 122	.00
Enjoyment	Version	.01	1, 121	.00
	Sex	.04	1, 121	.00
	Interaction	2.12	1, 121	.02
Suspense	Version	.47	1, 123	.004
	Sex	8.18**	1, 123	.06
	Interaction	.06	1, 123	.00

Note: All tests met the requirement of equal variances as tested by Levene's Test of Equality of Error Variances. * = $p < .05$; ** = $p < .01$.

Table 2 Means and Standard Deviations for Experimental Condition and Sex

Dependent Variable	Violence		No violence	
	Male (N = 15)	Female (N = 49)	Male (N = 24)	Female (N = 39)
Violence rating	4.60 (1.40)	5.22 (1.30)	4.25 (1.23)	4.41 (1.39)
Estimated acts of violence	78.93 (65.27)	92.50 (155.12)	32.92 (41.91)	47.92 (62.56)
Comprehensibility	6.07 (.64)	6.03 (.82)	5.71 (.94)	6.03 (.95)
Quality	5.42 (.50)	5.38 (.66)	5.24 (.76)	5.21 (.93)
Enjoyment	5.79 (1.06)	6.06 (.85)	6.04 (.79)	5.84 (.75)
Suspense	6.00 (.73)	6.44 (.70)	5.94 (.81)	6.31 (.67)

Note: Standard deviations in parentheses.

based upon random assignment to conditions, these participants were equally distributed in the two conditions (edited version: $N = 46$, uncut version: $N = 47$). We compared these participants on the question that asked for a rating about the extent to which the film's content was 'similar to what I recall'. Those who saw the edited version of the film ($M = 4.85$, $s.d. = 1.46$) rated it the same on the 7-point scale (7 = identical to what I recall, 1 = not at all similar to what I recall) as did those who saw the uncut version ($M = 4.85$, $s.d. = 1.58$). Given these results, we proceeded with the main analyses without respect to whether participants had indicated prior exposure to the film or not.

Reactions to the Film

We conducted a 2×2 ANOVA (Version \times Sex) on our measures of enjoyment (overall rating of enjoyment, indication of extent to which participant would love to see the film again, rating of how interesting the film was, and extent to which the film was fun to watch) and on suspense (how suspenseful the film was and how exciting the film was). No significant differences emerged on any of the enjoyment measures by version or by sex (see Table 1). Similarly, we analyzed the results for ratings of suspense. Here, we found no difference by condition, but women found the film significantly more suspenseful than men did [$F(1, 123) = 8.18$, $p < 0.01$; partial $\eta^2 = .06$]. There were no significant interaction effects between condition and sex in any of these analyses.

Discussion

The results of the experiment generally reveal that the violent version of the movie was no more enjoyable than the edited, non-violent version. This result is consistent with the few past studies that have attempted to examine the extent to which violent content might contribute to the overall enjoyment of the entertainment experience. This finding is particularly interesting in the present context since we removed about 11 minutes of violence (nearly all of it) from the original version of *The Fugitive*. In addition to the fact that the edited version appeared to be equally enjoyable, it also seems as if we were able to edit the film without significantly altering its quality. As Table 2 shows, the ratings of overall quality of the two versions were virtually identical.

In general, males and females tended to respond similarly to both versions of the movie. The fact that females found the movie to be more suspenseful than males is consistent with past research which shows that females tend to be more emotionally reactive to media violence and manifest more symptoms of a startle-reaction to scenes of violence than do males (Koukounas & McCabe, 2001). However, it is important to note that the sex difference we found on ratings of suspense was across both versions of the movie and was not confined to the unedited or more violent version of the film. In interpreting sex differences in response to frightening media, Cantor (2002) cites research by Fabes and Martin (1991) and Grossman and Wood, (1993) that supports the notion that, 'females in general are more emotional than males' (p. 301).

Despite the fact that the results of this experiment with respect to the enjoyment of violence are consistent with past studies, there are certainly reasons to be cautious before concluding that violence contributes little to the enjoyment of a movie. First, we used only a single film for this experiment. Consequently, we regard these results as entirely preliminary until we can replicate this study using other feature-length films. This might not be as simple as it sounds. In our search for candidates to use in this experiment, we found it quite difficult to identify films in which substantial amounts of violence could easily be edited out without significantly affecting the comprehensibility of the movie. In this respect, it could be that *The Fugitive* is somewhat unique and that we will have difficulty locating other movies that lend themselves to this editing approach. One distinctive feature of this film that made it particularly suitable for this experiment was that a substantial portion of the violence was depicted as part of 'flashback' sequences that could easily be edited without disturbing the clarity of the storyline.

Second, these results must still be interpreted with some caution due to power limitations in our design, especially in analyzing for sex differences. Still, we did have sufficient power to detect moderate effect sizes for the film manipulation. At the very least, our results indicate that any enjoyment enhancing effect of the violence, if present at all, would only qualify as a small effect in formal statistical terms.

Third, there is some indication in the past research (see Berry et al. 1999) that the enjoyment of media violence may be affected significantly by a variety of individual predispositions or personality characteristics. Moreover, as Sparks and Sparks (2000) noted, there may be some viewers who actually do enjoy depictions of media violence for their own sake. Future studies in this vein need to incorporate measures of individual differences and explore their contribution to the enjoyment equation.

Conclusion

The results of this preliminary experiment show support for the notion that media violence may not contribute much to the enjoyment of a feature-length motion picture. In addition to the theoretical implications of this finding for approaches to understanding the appeal of media entertainment, it may be important for practitioners to understand that violent content may not be an essential ingredient in establishing motion pictures that are enjoyed by the audience.

Notes

- [1] For the pilot study, we did not conduct formal statistical tests on the mean ratings due to the low numbers of participants in the two conditions. On average, the means in the two conditions only differed by about 0.3 -0.4 on a 7-point rating scale. Combined with the fact that participants who watched the edited film failed to find evidence that it had been edited, we proceeded to the main study relatively assured that we had succeeded with the manipulation.
- [2] The loss of these participants did not affect the statement about the power of the design earlier in the manuscript.
- [3] It is interesting to note that while participants who viewed the edited version of the movie perceived less than half as many violent acts as those who viewed the uncut version, they still

perceived an average of over 40 acts of violence when, in fact, there were less than 10 acts that objectively could have counted as violent according to the definition we provided. It may be that even a little media violence invokes a more general perception that the film is a 'violent' film and leads to subsequent judgments of violent content that are more consistent with the general perception than the specific one.

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