

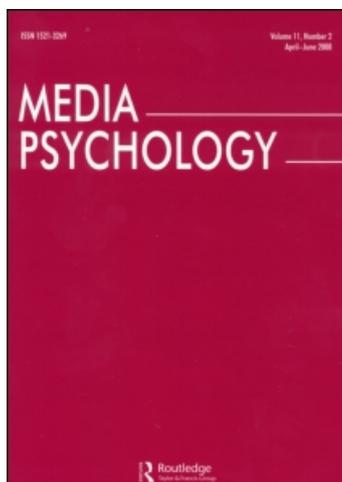
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### Liking Violence and Action: An Examination of Gender Differences in Children's Processing of Animated Content

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# **Liking Violence and Action: An Examination of Gender Differences in Children's Processing of Animated Content**

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*It is widely assumed that children like violence in cartoons, but this assumption has not been supported in existing studies that show nonviolent programs are liked just as much or more than violent programs. The present experiment extended enjoyment of media violence research by testing whether violence and action (independently manipulated) influenced children's liking of slapstick cartoons. We also proposed a path model to test potential indirect effects of violence and action on liking. Using animation software, four versions of a slapstick cartoon were created that varied in terms of violence (present, absent) and action (high, low). A total of 128 elementary school children watched one of the four versions of the program. Violence had no direct effect on the liking of the cartoon, but did indirectly decrease liking for males by decreasing boys' wishful identification with the anthropomorphized characters. Action increased liking for males but not for females.*

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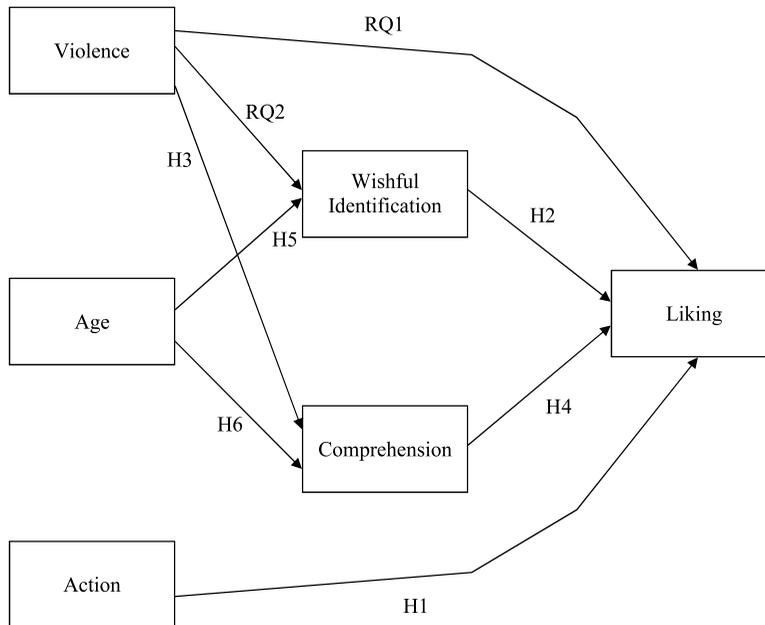
Children in the United States today are exposed to a tremendous amount of violent content in the media (see Wilson, 2008). Moreover, the media violence children are consuming is often justified, rarely punished, and perpetrated by attractive characters (Wilson et al., 2002), all characteristics that have been shown to increase ensuing imitation in viewers (Bandura, 1994; Hoffner & Cantor, 1985; Jo & Berkowitz, 1994). Indeed, several meta-analyses have found a medium-sized effect for the relationship between watching television and physical aggression in children (e.g., Bushman & Anderson, 2001; Paik & Comstock, 1994). Longitudinal studies have also found that exposure to television violence in childhood is associated with subsequent increases in adult aggression (e.g., Huesmann, 1986; Huesmann, Moise-Titus, Podolski, & Eron, 2003). Additionally, because of the risk that viewing can pose, professional organizations such as the American Academy of Pediatrics (2001) have recommended that parents limit children's television viewing to no more than two hours per day and allow no television at all to children under 2 years of age.

Despite concern about the effects of media violence, violent television shows and movies continue to be produced and marketed to children. Media producers often defend this content by arguing that children like to watch violent programming (e.g., Jones, 2002). Violent cartoons have been a staple of Saturday morning television programming for decades. Children's programs such as *Mighty Morphin Power Rangers* and *Pokemon* have drawn a great deal of attention because of both their violent content and their enormous popularity with young audiences (e.g., Boyatzis, Matillo, & Nesbitt, 1995). In fact, content analyses have shown that as many as 70% of children's television shows contain some violence (Wilson et al., 2002). For many producers and media critics, the question is not *if* children love violence, but rather *why* children love violence (Jones, 2002).

Enjoyment is defined as the positive emotional reception of an experience, in this case of media entertainment (see Tan, 2008). Although it has been argued that violence is enjoyable to audiences, experimental work has failed to uphold this idea (e.g., Weaver & Wilson, 2009). Our goal in this study was to examine children's liking of violent content while independently manipulating the amount of action, which is often confounded with violence in the existing research. We also wanted to explore how violence and action might influence liking by examining two potential mediating processes: wishful identification with the characters and comprehension of the content. In the following sections, we will lay out a proposed model (Figure 1) for how these variables might influence liking based on theory and previous research.

## MEDIA VIOLENCE AND ENJOYMENT

As previously stated, there is a common belief that violent content is en-



**FIGURE 1** Hypothesized path model with wishful identification and comprehension as mediators.

joyable (e.g., Jones, 2002). Indeed, several theories of media entertainment predict that violent content should increase enjoyment (see Sparks & Sparks, 2000). For example, excitation transfer theory has been used in this context (Zillmann, 1998). According to excitation transfer theory, exciting events within the plot can serve to increase positive emotional reactions at the end of the program (Zillmann, 1998). This amplification can occur because arousal does not dissipate immediately; when it lingers, it can “transfer” to and thereby heighten other emotional experiences. In the case of television violence, aggressive content can increase arousal (Carruthers & Taggart, 1973; Lazarus, Speisman, Mordkoff, & Davison, 1962), which can then intensify the enjoyment experienced when the program reaches a satisfactory conclusion. It is important to note, however, that in this case the violence itself need not be enjoyable (Sparks & Sparks, 2000). The role of violence in excitation transfer theory is to increase arousal; the immediate emotion generated by the violence is not necessarily predictive of the ultimate liking of the content. It is also the case that other content features such as action can increase arousal just as much, if not more, than violence (Weaver, Bae, & Potter, 2008).

Indeed, the existing research evidence does not provide much support for the hypothesis that violence in and of itself would increase liking of fictional entertainment. Research indicates that certain audiences, teenage males in particular, are inclined to seek out violent entertainment media (e.g., Bushman & Cantor, 2003). However, experiments that have specifi-

cally examined whether or not adults actually enjoy violent content have shown that violence either has no effect on enjoyment (e.g., Berry, Gray, & Donnerstein, 1999; Sparks, Sherry, & Lubsen, 2005), or makes programs *less* enjoyable (e.g., Diener & DeFour, 1978; Diener & Woody, 1981). For example, Weaver and Wilson (2009) conducted an experiment using five different prime-time television dramas that were edited to create versions with no violence, sanitized violence, and graphic violence. Undergraduate viewers rated the episodes with no violence as significantly more enjoyable than either of the violent versions, regardless of participants' gender, level of sensation seeking, or pre-existing aggression.

Empirical data regarding the role of violence in enjoyment for a child audience is relatively sparse. Diener and Woody (1981) conducted one of the few experiments looking at children's enjoyment of violence. Participants watched 1 of 10 hour-long adventure programs that had been rated as nonviolent and 1 of 10 different hour-long adventure programs that had been rated as violent. There were 27 child participants (age 12 and under) included in the study. The researchers found that the level of violence had no significant effect on children's enjoyment of the program.

Although the Diener and Woody (1981) study is notable for its failure to support the idea that violence increases enjoyment, the experiment is limited in two important ways. First, the sample was so small that there was limited statistical power to detect differences. Notably, a second and larger ( $N = 134$ ) sample of adults was tested in a similar fashion in the same study and with this increased power, the participants rated nonviolent programs as significantly more enjoyable than violent programs. A second limitation of the study is that entirely different programs were used for the violent and nonviolent conditions. In other words, the experimental versions differed not only in amount of violence, but also in plot, actors, special effects, humor, theme, and any number of other characteristics that could have influenced enjoyment.

Thus, only a small body of research exists addressing the relationship between mediated violence and children's enjoyment, and that research does not support the most common beliefs about the effect of media violence on enjoyment. Of course, this disconnect could be the result of methodological limitations in the existing research discussed above. The present study was designed to address some of these drawbacks by independently manipulating the level of violence and the level of action in a cartoon. This manipulation allowed us to examine the direct role of violence in liking of a children's cartoon. Given that the existing theorizing and research has not yet led to any firm conclusions about children's enjoyment of violence, the following was posed as a research question:

RQ1: Will nonviolent versions of the cartoon be liked more than violent versions of the cartoon?

## THE ROLE OF ACTION IN CHILDREN'S ENJOYMENT

The amount of action in a program is another content feature that may influence liking. Producers believe that action is a key attractive component for children (Acuff, 1997). Indeed, in a survey of children's media likes and dislikes, action was consistently listed as one of the most valued program characteristics (Valkenburg & Janssen, 1999). Violent scenes tend to be high action scenes, with rapid motion and a variety of sounds and special effects (Baldwin & Lewis, 1972). However, action and violence are conceptually distinct (Huston-Stein, Fox, Greer, Watkins, & Whitaker, 1981). It is possible to have action in the absence of violence and vice versa. Moreover, researchers have suggested that it could be the action contained in violent scenes, not the violence itself, that is enjoyable for viewers (Diener & Woody, 1981; Potts, Huston, & Wright, 1986).

At least two studies indicate that high levels of action increase attention, whereas violence may not. Both Huston-Stein et al. (1981) and Potts et al. (1986) found that children engaged in more eye contact with the screen during high action programs than they did during low action programs, independent of the amount of violence. Of course, attention is conceptually distinct from liking. Nonetheless, it is worth asking whether action might be a driving force in determining liking. Based on research evidence that action is highly valued by children (Valkenburg & Janssen, 1999) and can increase attention (e.g., Potts et al., 1986), the following hypothesis was proposed:

H1: The high action version of a televised cartoon will be liked more than the low action version will be.

## WISHFUL IDENTIFICATION AND THE ENJOYMENT OF VIOLENCE

In addition to the potential direct effects of violence and action on enjoyment, we also wanted to explore how violent content might indirectly influence liking of a program. One variable that has been shown to influence children's enjoyment of media is wishful identification. Hoffner and Buchanan (2005) defined wishful identification as the desire to be like or act like a television character. In general, audience members tend to wishfully identify with characters who are similar in attitudes and beliefs or who represent the type of person an audience member wants to become (Hoffner, 1996). This wishful identification, in turn, allows the viewer to become more involved with the story and to react emotionally in the intended ways, which should lead to more enjoyment (Cohen, 2006; Fiske, 1989). Research has supported this link between wishful identification and enjoyment (see Cohen, 2006).

For example, Schneider, Lang, Shin, and Bradley (2004) found that wishful identification with video game characters was related to enjoyment of the game. Thus,

H2: Wishful identification with the protagonist will be positively related to liking of the cartoon.

To the extent that violence influences wishful identification, then, it could also indirectly affect liking. Research has shown that, compared to children low in aggression, children high in aggression are more likely to wishfully identify with violent characters (Eyal & Rubin, 2003). Hoffner and Buchanan (2005) found that males, but not females, reported greater wishful identification with more violent characters. However, it is not clear from the above studies that violence in and of itself would increase wishful identification, even for these groups. As Hoffner and Buchanan note, in their study, the overall level of perceived violence among characters the participants wishfully identified with was relatively low, even for males. Moreover, violent male characters could be associated other factors (e.g., exciting jobs), which might increase wishful identification.

In fact, because violent behavior is clearly not socially approved, violent actions by characters could make wishful identification with those characters *less* likely. After the age of about 2 years old, incidents of physical aggression steadily decline as children are socialized to understand that in most cases violence is not appropriate behavior (Hay, 2005; Tremblay, 2004). Not only is violent behavior discouraged by parents and teachers, but children who routinely behave in an aggressive manner are also typically excluded from social groups by their peers (Nesdale, Milliner, Duffy, & Griffiths, 2009). Children even evaluate ingroups with aggressive group norms less positively than ingroups that do not endorse aggressive behavior (Nesdale et al., 2009). Given that violence often negatively impacts children's evaluation of real-life peers, it is possible that it could cause a devaluation of media characters as well. Of course, evaluation of characters and a desire to do what those characters do (i.e., wishful identification) are not necessarily related. Thus, it remains to be seen how violence might affect wishful identification.

RQ2: Will wishful identification with violent and nonviolent characters differ?

## COMPREHENSION AND THE LIKING OF VIOLENCE

Comprehension could also mediate the effect of violence on enjoyment. Children exhibit the greatest liking of content that they can understand;

if programming is too difficult to follow, they will attend to and enjoy that content less (Anderson & Burns, 1991; Valkenburg & Janssen, 1999). Violent content could inhibit a child's ability to attend to and understand central themes in a story, because violent content tends to be more salient than other storytelling elements. For example, in a study by McKenna and Ossoff (1998), violent content in an episode of the children's program *The Mighty Morphin Power Rangers* interfered with younger children's ability to understand and remember the story sequence and the main theme of the episode. Similarly, Byrne, Linz, and Potter (2009) found that violence was more salient than other components of a media literacy program, and when the violence was present, it distracted children from the primary message of the intervention. Given the above, the following hypotheses were proposed:

- H3: Comprehension will be higher for the nonviolent version of the cartoon than for the violent version.
- H4: Comprehension will be positively related to liking of the cartoon.

#### AGE AND GENDER OF THE VIEWER AND THE PROPOSED MODEL

Thus far, we have addressed the overall impact that violence and action could have on children's wishful identification, comprehension, and program liking. A child's age could also influence wishful identification and comprehension. Numerous studies have found strong developmental differences in children's perceived reality of television (see Dorr, 1983; Wright, Huston, Reitz, & Piemyat, 1994). Young children naively assume that anything on television that looks real *is* real. As children mature, however, they are able to make more meaningful distinctions between the television world and physical reality (Dorr, 1983). Because perceived similarity with characters is one of the strongest predictors of wishful identification (Hoffner & Buchanan, 2005), developmental differences could influence wishful identification with the animated, anthropomorphized characters in this cartoon. Older children, with a more advanced conceptualization of reality, should perceive less similarity and thus be less likely to identify with the anthropomorphized characters than younger children will. Consistent with this idea, Wilson and Drogos (2007) found that preschoolers were more likely to wishfully identify with anthropomorphized characters than human ones. Given the above findings, we hypothesized that:

- H5: Older children will experience less wishful identification with the characters than younger children will.

Age should also influence comprehension of the cartoon. In general, as children get older their ability to comprehend media content increases (see Strasburger, Wilson, & Jordan, 2009). Thus, we predicted:

H6: Age will be positively related to comprehension of the program.

Figure 1 illustrates the path model derived from the aforementioned hypotheses and research questions. One additional variable we considered is the gender of the viewer. The gender of the child could influence the strength of the hypothesized paths in the model, particularly those associated with violence and action. According to gender-role socialization theory, young boys are socialized to engage in and appreciate violence (Cantor, 1998). As early as 2- or 3-years-old, boys and girls begin a process of gender segregation regarding their preference for toys, activities, and media products, with boys drawn more to violence and girls more to nurturing toys and activities (Valkenburg & Cantor, 2000). Looking specifically at media tastes, Valkenburg and Janssen (1999) found that males were more likely than females to list a preference for violence. In fact, females in that survey tended to have a negative reaction to violent content. Other researchers also have found that boys are attracted to violent and dangerous themes whereas girls are attracted to more relationship-based themes (Acuff, 1997). Males are also more likely to identify with violent characters than females are (Hoffner & Buchanan, 2005). Based on the above, we expected the following:

H7: Males will like the violent version of the cartoon more than the nonviolent version, whereas females will like the nonviolent version of the cartoon more than the violent version.

Valkenburg and Janssen (1999) also found that gender moderated the appeal of action. As with violence, males reported a strong preference for action. Females, however, put more value on other program characteristics besides action (e.g., comprehensibility, innocuousness). Based on this research, the final hypothesis was advanced:

H8: Males will like the high action version of the cartoon more than the low action version, whereas females will not differ in their liking of the low and high action versions of the cartoon.

## METHOD

### Participants

Participants in this experiment were 128 children consisting of 21 kindergarteners, 24 first graders, 34 second graders, 31 third graders, and 18 fourth

graders. They ranged in age from 5 to 11 years, with an average age of 7.55 years ( $SD = 1.46$ ). The sample was almost evenly split between males (49%) and females (51%).

## Procedure

Participants in this sample were recruited from local elementary schools and from afterschool programs run by a local nonprofit organization. Parents gave permission via consent forms and all participants signed their own assent forms at the start of data collection. A research assistant took one child at a time to a quiet location within the school. Children were randomly assigned to watch one version of the cartoon. After viewing was over, a trained research assistant led the child through the questionnaire at a comfortable pace. Questionnaire completion took approximately 20 minutes. When the child was done, the research assistant debriefed the child, gave the participants a sticker as compensation for their participation, and escorted them back to their teacher.

## Stimulus

An original animated short was created using Macromedia Flash (6.0). The animated short, titled *Picture Perfect Thief*, was approximately 5 minutes in length. In the cartoon, Eggle (the villain) attempts to steal a painting created by Orangehead (the hero). Eggle ultimately fails and the cartoon ends with Orangehead winning first prize in an art show.<sup>1</sup>

Several features of the short are worthy of mention. First, it was designed to look like the genre of children's programming referred to as slapstick (e.g., Looney Tunes). Slapstick programming has been found to contain more violence than other children's programming (Wilson et al., 2002); hence, slapstick seemed like an ideal genre for the stimulus. Second, the characters of the animated short were two anthropomorphized creatures (one looked like an egg and one like an orange) with torsos, arms, and legs. The arms and legs were fully movable and functional and both characters could move and act like human beings. The characters were anthropomorphized because previous research has shown that a majority of violent perpetrators in children's programming were anthropomorphized (Wilson et al., 2002). Finally, no characters spoke in the short; instead, a female actor narrated the plot. This allowed researchers to measure each participant's perception of the character's gender independent of the character's voice. Additional sound was purchased from a professional sound company (including a theme song and several sound effects).

The core version of the animated short was manipulated to create four different conditions. Six violent scenes were added to the cartoon to create a violent version. In the violent version, both characters performed violent acts

toward each other, including hair pulling, punching, and kicking. Moreover, the aggression committed by the protagonist was a justified and appropriate response to earlier aggression from the villain. The hero ultimately used aggression to triumph in the end. This sort of back-and-forth between the characters is typical of the violence contained in children's cartoons (Wilson et al., 2002). The violent scenes were spread throughout the short so that violence was not nested in one particular sequence of the story. Additional nonviolent scenes were put in to the nonviolent version to balance the running time of the cartoon and to maintain continuity in the plot.

The amount of action was manipulated as well. Nine action scenes were added to the cartoon to create a high action version. Action was operationalized as increased pacing, movement, and activity onscreen (Acuff, 1997; Huston-Stein, et al., 1981; Potts et al., 1986). In the high action version, characters ran instead of walked, paint splattered all over the place, and the screen spun during transitions (a typical transition mechanism in cartoons). In addition, the frames per second (fps) of the high action version was increased to 16 (as opposed to 12, the default amount of frames per second of most animation software programs as well as the number in the core version). Increasing the number of frames per second is one way to make an entire animated feature move faster without significantly altering the cartoon.

Thus, four different versions of the cartoon were created: low action–nonviolent, low action–violent, high action–nonviolent, and high action–violent. These versions were pretested with 259 undergraduate students recruited from introductory communication classes. The students were offered extra credit to watch one randomly assigned version of the cartoon, which they then rated for violence, action, representativeness, and production value. Perceptions of violence were measured using two 7-point scales with antonym anchors on either end: “*nonviolent–violent*” and “*not aggressive–aggressive*.” Perceptions of action were measured using five 7-point scales: “*sluggish–lively*,” “*lethargic–energetic*,” “*not dynamic–dynamic*,” “*leisurely–rapid*,” and “*slow moving–fast paced*.” Representativeness (“*not typical–typical*”) and production value (“*not well produced–well produced*”) were single 7-point scales measures.

We ran a 2 (violent, nonviolent)  $\times$  2 (high action, low action)  $\times$  2 (male, female) between-subjects analysis of variance of the college students' ratings of the cartoons. The violent versions were perceived as being more violent ( $M = 5.11$ ,  $SD = 1.20$ ) than the nonviolent versions ( $M = 2.58$ ,  $SD = 1.26$ ),  $F(1, 248) = 257.89$ ,  $p < .001$ ,  $\eta^2 = .49$ . The high action versions were perceived as having more action ( $M = 3.14$ ,  $SD = 1.14$ ) than the low action versions ( $M = 2.77$ ,  $SD = 1.05$ ),  $F(1, 248) = 8.16$ ,  $p < .01$ ,  $\eta^2 = .03$ . Thus, the manipulations of violence and action did significantly change perceptions in the desired direction. Moreover, the manipulations appeared to work independently. The perceived action in the nonviolent ( $M = 2.94$ ,  $SD = 1.10$ ) and violent ( $M = 2.95$ ,  $SD = 1.12$ ) versions did not differ,  $F(1,$

248) = .01,  $p = .92$ . Similarly, the perceived violence in the low action ( $M = 3.81$ ,  $SD = 1.82$ ) and high action ( $M = 3.97$ ,  $SD = 1.70$ ) versions did not differ,  $F(1, 248) = .66$ ,  $p = .42$ . None of the versions differed in the ratings of representativeness ( $M = 3.81$ ,  $SD = 1.47$ ) or production value ( $M = 3.86$ ,  $SD = 1.52$ ).

## Measures

### PROGRAM LIKING

After viewing the cartoon, children were asked, "How much did you like this show?" Response options to this question were (0) *not at all*, (1) *a little*, (2) *pretty much*, (3) *very much*, and (4) *very, very much*.

### WISHFUL IDENTIFICATION

Children answered a question about their wishful identification with each of the characters ("e.g., How much would you like to do the kinds of things Orangehead does on the show?") using the same 5-point scale (Hoffner, 1996). Although we measured wishful identification with both characters, only wishful identification with the protagonist was included in the analyses. Not surprisingly, wishful identification with the antagonist was very low across conditions ( $M = .46$ ,  $SD = .97$ ), meaning there was likely a floor effect with this particular dependent variable.

### COMPREHENSION

The child answered six questions to assess whether he or she understood what happened in the cartoon. Children were asked, "What happened in this cartoon?" and "Why did Orangehead make the painting?" Children were then asked four questions about events that happened in the cartoon. Response options were created so that there was only one correct answer depending on the stimulus condition to which the child was assigned. For example, one question asked, "How did Eggle fall into the paint can?" Response options were (1) "got punched by Orangehead," (2) "slipped on some paint," or (3) "tripped over a radio." Children who were assigned to the violent versions of the cartoon should have answered "got punched by Orangehead" as the correct response whereas "slipped on some paint" was the correct answer for those children assigned to the nonviolent conditions. A child's comprehension score was the total number of correct answers given out of the six questions.

### CHARACTER AND PROGRAM JUDGMENTS

Two orderings of the questionnaire were created so that half of the participants were asked about Orangehead first and Eggle second, whereas the

other half answered questions about Eggle first and Orangehead second. In the analyses, no differences were found between these two questionnaire versions. In order to conduct an additional check of the violence manipulation, participants were asked how violent they thought each character was: (0) *not at all*, (1) *a little*, (2) *pretty much*, (3) *very much* and (4) *very, very much*. For younger children in the sample, the term “violence” was defined by saying “sometimes people are violent, which means they hit, kick, or push other people.” The violence ratings for these two characters were averaged to create a perception of violence measure. The participants were also asked if they thought each character was a (1) *a girl*, (2) *a boy*, or (3) *can't tell*. Finally, participants were asked whether they thought the cartoon was made for (1) *just girls*, (2) *just boys*, or (3) *both girls and boys* and whether the program was made for (1) *kids younger than you*, (2) *kids your age*, (3) *kids older than you*, or (4) *all kids*.

## RESULTS

Means, standard deviations, and zero-order correlations for key variables are shown in Table 1. A one-way analysis of variance was conducted on the

**TABLE 1** Means, Standard Deviations, and Zero-Order Correlations for Key Variables

Variable	Means	Standard deviations	1. Violence	2. Action	3. Wishful ID	4. Comp	5. Age
1. Violence	.51	.50	—				
Females	.51	.50	—				
Males	.51	.50	—				
2. Action	.48	.50	-.05	—			
Females	.48	.50	-.05	—			
Males	.49	.50	-.05	—			
3. Wishful ID	2.42	1.46	-.11	-.02	—		
Females	2.28	1.44	-.05	-.06	—		
Males	2.57	1.27	-.18	.01	—		
4. Comprehension	5.17	1.00	.15	-.03	.09	—	
Females	5.25	.98	.12	-.21	.13	—	
Males	5.10	1.03	.19	.16	.07	—	
5. Age	7.55	1.46	.01	-.02	-.18*	.36**	—
Females	7.60	1.59	.08	-.05	-.18	.31*	—
Males	7.49	1.32	-.09	.02	-.19	.42**	—
6. Liking	2.59	1.19	.01	.06	.37**	-.15	-.29**
Females	2.69	1.10	-.02	-.10	.36**	-.30*	-.33**
Males	2.49	1.27	.03	.20	.41**	-.02	-.25*

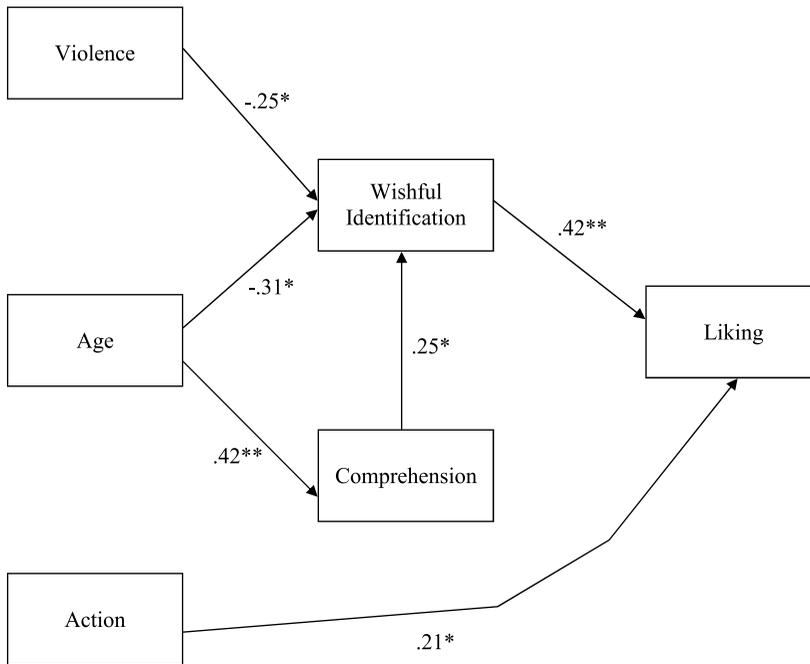
*Note.* The means and standard deviations listed first in each cell are for the entire sample. The manipulated variables of violence and action were both coded as 0 (*absent*) or 1 (*present*). Wishful identification (Wishful ID) and liking both ranged from 0 to 4. Comprehension ranged from 2 to 6. Age ranged from 5 to 11 years.

\* $p < .05$ . \*\* $p < .01$ .

manipulation check for perceived violence. There was a significant difference in viewer perceptions of violence,  $F(1, 126) = 11.79, p < .01, \eta^2 = .09$ . The characters in the violent versions were rated by the children as more violent ( $M = 3.66, SD = 1.37$ ) than the characters in the nonviolent versions were ( $M = 2.75, SD = 1.64$ ). Despite our best efforts to keep the characters gender neutral, the protagonist was more likely to be judged as a boy ( $n = 83$ ) than as a girl ( $n = 9$ ) or "you can't tell from the show" ( $n = 36$ ),  $\chi^2(2, N = 128) = 65.73, p < .001$ . Participants also thought the antagonist was a boy ( $n = 107$ ) rather than a girl ( $n = 2$ ) or "can't tell" ( $n = 19$ ),  $\chi^2(2) = 148.89, p < .001$ . It is worth noting, however, that despite the belief that the characters were male, the children felt that the cartoon was made for a broad target audience. Specifically, the participants overwhelmingly felt that the cartoon was made for both girls and boys ( $n = 121$ ), instead of just for boys ( $n = 5$ ) or just for girls ( $n = 2$ ),  $\chi^2(2, N = 128) = 215.83, p < .001$ . They also were more likely to believe that the cartoon was made for all kids ( $n = 91$ ) rather than kids their age ( $n = 11$ ), younger kids ( $n = 23$ ) or older kids ( $n = 2$ ),  $\chi^2(3, N = 127) = 154.42, p < .001$ . Collectively, these findings indicate that the participants felt they were part of the target audience for this cartoon.

The hypothesized model (Figure 1) was tested in separate analyses for males and females using AMOS 7.0. In order to determine whether the model operated differently for males and females, the path coefficients in these analyses were constrained to be equal to each other. The chi-square test for differences revealed that the hypothesized model was not invariant between the two groups,  $\chi^2(7, N = 128) = 15.23, p = .03$ . That is, the model worked differently for males and females; these gender differences will be discussed further below. Model fit was evaluated as recommended by Thompson (2004) using the chi-square test, the comparative fit index (CFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA). For the overall model for the male sample, the chi square was not significant,  $\chi^2(8, N = 63) = 8.26, p = .41$ . The NFI was .9, the CFI was .99, and the RMSEA was .02, all of which indicate an acceptable goodness-of-fit. However, this model did result in several nonsignificant paths. Using methods for model trimming recommended by Kline (2004), the nonsignificant paths were sequentially removed from the model. The resulting respecified model again demonstrated good fit,  $\chi^2(9, N = 63) = 10.46, p = .32, NFI = .95, CFI = .97, RMSEA = .05$ . This model is shown in Figure 2. The path model for females was also adjusted by removing the nonsignificant paths and the resulting respecified model can be seen in Figure 3. This model also demonstrates an acceptable level of fit,  $\chi^2(5, N = 65) = 4.64, p = .46, NFI = .9, CFI = 1, RMSEA = .01$ .

Research Question 1 asked whether violence would influence liking of the cartoon. There was no direct effect of violence on liking for either males or females.



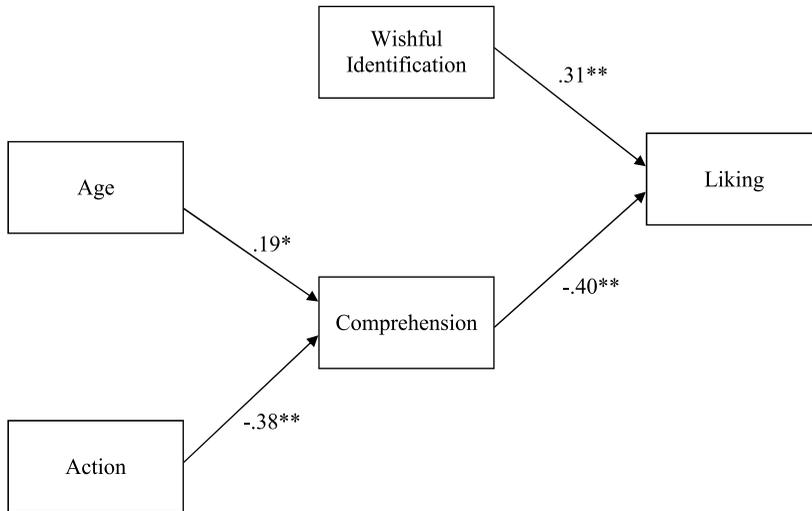
**FIGURE 2** Path model for boys with wishful identification and comprehension as mediators; nonsignificant paths sequentially removed,  $*p < .05$ .  $**p < .01$ .

Hypothesis 1 predicted a direct effect of action on liking. This hypothesis was supported, but only for the males. The high action version of the cartoon was significantly more likeable than the low action version for males. For females, there was no direct effect of action on liking.

Research Question 2 asked whether violence would influence wishful identification. The path models show that, for males, there was less wishful identification with the violent protagonist than with the nonviolent protagonist. Violence had no effect on wishful identification for females. For both males and females, there was a significant positive relationship between wishful identification and liking of the show, so Hypothesis 2 was supported. Thus, there was an indirect effect of violence on liking for males via wishful identification,  $r = -.11$  (see Figure 2).

Contrary to Hypothesis 3, violence had no effect on comprehension of the cartoon for either males or females. Comprehension did not directly affect liking for the male sample and significantly *decreased* liking for the female sample, so Hypothesis 4 was not supported either. There was, however, an indirect effect of action on liking for females via comprehension,  $r = .15$  (see Figure 3).

Hypothesis 5 predicted that older children would experience less wishful identification with the characters than younger children would. This was supported for males, as there was a significant negative relationship between



**FIGURE 3** Path model for girls with wishful identification and comprehension as mediators; nonsignificant paths sequentially removed, \* $p < .05$ . \*\* $p < .01$ .

age and wishful identification. For females, however, age had no effect on wishful identification. Hypothesis 6 predicted that age would be positively related to comprehension. This hypothesis was supported for both males and females.

Hypothesis 7 predicted that males would like the violent version of the cartoon more than the nonviolent version, and females would like the nonviolent version more than the violent version. As described above, there were differences between males and females on several of the paths in the model; however, this particular path was not one of them. Violence had no direct effect on liking for males or females, so Hypothesis 7 was rejected. To further examine the difference between males and females in their liking of violence, a 2 (violent, nonviolent)  $\times$  2 (high action, low action)  $\times$  2 (male, female) between-factors analysis of variance was conducted. There was no significant interaction between gender and violence,  $F(1, 119) = .02$ ,  $p = .89$ .

Hypothesis 8 predicted that the influence of action on liking would differ for males and females, such that action would increase liking for males but have no such effect for females. As the path models show, the high action cartoon was significantly more enjoyable than the low action cartoon for males but not for females. To further test this hypothesis, we referred again to the analysis of variance described above. The analysis revealed a significant interaction between gender and action,  $F(1, 119) = 4.21$ ,  $p = .04$ ,  $\eta^2 = .03$ . Scheffé post hoc tests ( $p < .05$ ) showed that boys enjoyed the high action version ( $M = 2.81$ ,  $SD = 1.14$ ) significantly more than the low action version ( $M = 2.25$ ,  $SD = 1.15$ ). For girls, there was no significant difference between

the low action version ( $M = 2.84$ ,  $SD = 1.17$ ) and the high action version ( $M = 2.58$ ,  $SD = 1.03$ ). Thus, Hypothesis 8 was supported.

## DISCUSSION

The present experiment examined whether manipulating violence and action independently in an original animated short directly influenced children's liking of the program, and tested a proposed model in which wishful identification and comprehension mediated these effects. Violent content was not directly related to liking for either boys or girls. Violence did indirectly *decrease* liking of the program for boys, however, by decreasing boys' wishful identification with the protagonist. Action had a direct positive effect on liking for boys, and it indirectly increased liking for girls by decreasing comprehension.

The findings related to the liking of violent content are consistent with existing research on the topic, in which violence has been found to either decrease or have no effect on enjoyment (Weaver, in press). The present study provides further evidence that violence, in and of itself, does not increase children's liking of a program. Moreover, the results are consistent with a possible indirect relationship between violence and liking. By decreasing wishful identification with characters, violence could indirectly decrease liking, as it did for males in this study. Thus, a decrease in wishful identification with the protagonist could be the explanatory mechanism for those contexts in which violent content is found to be less enjoyable than nonviolent equivalents (e.g., Diener & DeFour, 1978; Weaver & Wilson, 2009).

A key question, then, is, "Why would violence decrease wishful identification with characters?" One possible explanation is that viewers engage in a negative evaluation of violent behavior, as is seen in children's real-life evaluations of perpetrators of violence (Nesdale et al., 2009). If children have learned that there is disapprobation associated with aggression, they may be less interested in engaging in those behaviors. The type of violence displayed in this cartoon is also noteworthy here. As is typically the case in children's programming, the characters in the violent versions were both perpetrators and victims of violence. Thus, viewers could see aggression as increasing the likelihood of their own victimization, thereby decreasing wishful identification with the characters.

Surprisingly, violence decreased wishful identification only for males, not for females in this study. If children hold negative attitudes toward violence overall or believe that engaging in violence might increase their own likelihood of victimization, then the violence should decrease wishful identification for girls just as it did for boys in this study. It is notable, however, that the children overwhelmingly thought that the characters in

this cartoon were male. This assumption mirrors reality as content analyses have shown that 93% of violent perpetrators in slapstick programming are male (Wilson et al., 2002). Perhaps girls expected to see or at least were less bothered by the aggressive behavior in these outgroup (male) characters. Future research is needed to determine whether aggressive behavior by female characters would decrease wishful identification for female viewers.

Another possible explanation for the findings related to wishful identification in this study is that some other, unexamined variables were also driving wishful identification with the protagonist. For example, Hoffner and Buchanan's (2005) study of young adults identified two characteristics that were not included in this study that could be driving females' wishful identification with the male characters. Specifically, they found that females wishfully identified more strongly with male characters who were more successful and more admired by other characters. Perhaps the violence perpetrated by male characters in this study was more salient and thus more likely to influence wishful identification for male viewers, but female viewers were more attuned to the characters' relative success, which was not manipulated here. This could also help explain why age was related to wishful identification for boys but not for girls in this study. That is, age might have been more salient for boys watching the ingroup (male) characters, but girls could have been more focused on other characteristics like success and admiration. A potentially fruitful area of research would explore how violence might interact with these additional characteristics to influence wishful identification with the characters.

One reason that producers may use violence, even though it does not in itself appear to increase enjoyment directly, is that violent scenes are typically action-packed scenes. Previous research has shown that action is a program characteristic that is highly valued by children (Valkenburg & Janssen, 1999). In this study, we were able to independently assess the impact of action on liking of the cartoon. As expected, for males there was a direct positive effect of action on liking of the cartoon. A possible explanation for the finding that boys preferred high-action content is that males are socialized to like watching action-packed, fast-moving content, whereas females prefer a slower-paced story focused more on relationship-based themes (Acuff, 1997). This is consistent with previous research on children's likes and dislikes in the media (e.g., Valkenburg & Cantor, 2000). A gender-role socialization theory is typically used to predict gender differences in a preference for violent content (Cantor, 1998). This study indicates that such a theory might also be relevant for considering the enjoyment of action. Certainly, these results indicate that males prefer higher action content, but more research is necessary to determine whether males are in fact encouraged or expected to consume high action content.

For females in this study, there was no direct effect of action on liking, but action did decrease females' comprehension of the program. Action had

no effect on males' comprehension. These gender differences in comprehension could be a function of the amount of attention paid to the content. Although comprehension and attention are distinct processes, attention is necessary at some level for comprehension to occur. Research has shown that males pay more attention to high action content than low action content (e.g., Potts et al., 1986). To our knowledge, no one has specifically examined how action influences girls' attention to content; however, if females pay less attention to high action content than to low action content, then decreased comprehension should follow. This finding is consistent with the gender role socialization theory just described.

One potential caveat that should be taken into account when interpreting the above results is that this experiment used a single message design (see Wells & Windschitl, 1999). It is possible that these findings are the result of some unique feature of the stimulus cartoon. The extensive time and cost associated with producing a cartoon from scratch precluded us from using a multiple message design. We were willing to sacrifice some generalizability, however, in order to maintain rigorous control over the manipulated variables of violence and action. Moreover, the pretest results indicated that the short we used was representative of cartoons that children currently watch. Still, it remains to be seen whether future studies using different stimuli will replicate these results.

Another limitation worth noting is that we used single-item measures to assess children's liking of the program and children's wishful identification with the characters. Methodologically, every effort was made to simplify the questionnaire as much as possible to ensure that the children understood the questions and provided valid answers. Nonetheless, it could be worthwhile in future research to attempt to reproduce these findings using different methods of measuring the depending variables in this study.

Future studies will hopefully address these issues and continue to explore the role of violence in children's attraction to media content. From a public health perspective, there is a great deal of concern about the potential negative effects of viewing media violence (e.g., American Medical Association, 2002). Violence is especially prevalent in programming geared toward children. Many producers of children's television and movies seem to view onscreen violence as a necessary evil. If the violence is removed, then they fear that children will not like the end result. Yet, in this study, we found that the violence that is typical of children's cartoons is unlikely to increase liking and may in fact indirectly *decrease* liking by decreasing wishful identification with violent characters. The amount of action matters, at least for boys, but if action can be generated in nonviolent ways (as it was in this study), then violence, along with the negative effects associated with violence, could be reduced without any impact on children's liking of the program.

## NOTE

1. A version of this original short can be found at: <http://www.youtube.com/watch?v=AU1-yL84bl4>. Please contact the corresponding author for more information or for permissions related to the use of the cartoon in further research.

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