

Parental Desensitization to Violence and Sex in Movies

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movie violence, movie sex, movie ratings, desensitization, parents, adolescents

ABBREVIATIONS

CARA—Classification and Rating Administration
CI—confidence interval
MPAA—Motion Picture Association of America

Dr Romer conceptualized and designed the study, conducted the statistical analyses, and drafted the initial manuscript; Dr Jamieson conceptualized and designed the study and reviewed and revised the manuscript; Drs Bushman and Bleakley contributed to the design of the study and reviewed and revised the manuscript; Drs Wang and Langleben contributed to the analysis of the data and reviewed and revised the manuscript; Dr Hall Jamieson conceptualized and designed the study and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

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WHAT'S KNOWN ON THIS SUBJECT: Movie ratings designed to warn parents about violence and sexual content have permitted increasing amounts of each in popular films. One potential explanation for this “ratings creep” is parental desensitization to this content as it becomes more prevalent in movies.



WHAT THIS STUDY ADDS: This study adds experimental evidence that parents become desensitized to movie violence and sex and are more willing to allow children to view such content.

abstract

FREE

OBJECTIVES: To assess desensitization in parents' repeated exposure to violence and sex in movies.

METHODS: A national US sample of 1000 parents living with at least 1 target child in 1 of 3 age groups (6 to 17 years old) viewed a random sequence of 3 pairs of short scenes with either violent or sexual content from popular movies that were unrestricted to youth audiences (rated PG-13 or unrated) or restricted to those under age 17 years without adult supervision (rated R). Parents indicated the minimum age they would consider appropriate to view each film. Predictors included order of presentation, parent and child characteristics, and parent movie viewing history.

RESULTS: As exposure to successive clips progressed, parents supported younger ages of appropriate exposure, starting at age 16.9 years (95% confidence interval [CI], 16.8 to 17.0) for violence and age 17.2 years (95% CI, 17.0 to 17.4) for sex, and declining to age 13.9 years (95% CI, 13.7 to 14.1) for violence and 14.0 years (95% CI, 13.7 to 14.3) for sex. Parents also reported increasing willingness to allow their target child to view the movies as exposures progressed. Desensitization was observed across parent and child characteristics, violence toward both human and non-human victims, and movie rating. Those who frequently watched movies were more readily desensitized to violence.

CONCLUSIONS: Parents become desensitized to both violence and sex in movies, which may contribute to the increasing acceptance of both types of content by both parents and the raters employed by the film industry. *Pediatrics* 2014;134:877–884

In recognition that parents might not want their children exposed to violent or sexually explicit films, the Motion Picture Association of America (MPAA), the movie industry's trade association, assigns ratings that warn parents of that content.¹ In recent years, however, the MPAA's rating board, the Classification and Rating Administration (CARA), has allowed more violent content into the films it rates as acceptable for adolescents under the age of 17 years (its PG-13 category for viewers ages 13 years and older).²⁻⁵ For example, the amount of gun violence in top-grossing PG-13 films has more than tripled since the PG-13 rating was introduced in 1985.² Indeed, in 2012, popular PG-13 films contained significantly more gun violence than R-rated films (restricted to children under age 17 years unless accompanied by an adult), which are more likely to contain explicit sex.^{2,4} Although sexual content has been classified more consistently in the R category,⁴ there is also evidence that sex has become more prevalent in that category.^{5,6}

CARA acknowledges that its standards have changed over time and attributes this to the changing standards of parents.¹ An alternative and not necessarily incompatible explanation for this "ratings creep" is that parents on CARA's rating board and in the general population have become desensitized by repeated exposure to increasing amounts of violence and sex in films.⁵ Desensitization occurs when repeated expo-

sure to a disturbing stimulus reduces the emotional response to that content,⁷ a phenomenon that has been observed in response to violent⁸⁻¹³ and sexual media.¹⁴ Consistent with this interpretation, a Kaiser Family Foundation survey of over 1000 parents found that parents were less concerned about their children's exposure to sex (51% vs 67%) and violence (46% vs 62%) in 2006 than in 1998.¹⁵

To test the desensitization hypothesis, we asked an online panel of parents to view a succession of brief movie scenes containing either violent or sexual content. After each clip, parents rated the age at which they considered it appropriate for a child to view the film from which the scene was taken. If desensitization affects the reactions of parents, exposure to successive scenes should reduce the age at which they would consider it appropriate for a child to view such content. In addition, desensitization should be more apparent among parents who consume more movies.

To test the limits of desensitization, we also examined the effect of increasing exposure to violence in films not only directed toward humans but also toward human-like characters. In addition, we examined whether desensitization can transfer between violence and sex. The desensitization hypothesis predicts that repeated exposure to either disturbing stimulus (graphic violence or overt sex) can desensitize parents to the other type of content.

METHODS

Participants

Participants were 1000 parents who were members of the online research panel sponsored by Research Now.¹⁵ The panel is representative of online households, and the firm uses quality controls that restrict excessive participation in surveys. Participants for this study were adult parents or guardians of a child residing in the home in 1 of the following 3 target age groups: 6 to 9 years ($n = 301$), 10 to 12 years ($n = 301$), and 13 to 17 years ($n = 398$). By MPAA standards, all of the movies we tested would be inappropriate for the 2 younger groups. A parent with a child in more than 1 age group was randomly assigned to 1 group.

Movie Content

We identified brief scenes of violence in 6 movies, 5 of which were rated as either PG-13 or R (see Table 1). An additional clip was taken from a PG-13 film that was unrated when released on DVD. In each case, a character was shown harming another character, most often by using a firearm. Two of the clips from the *Terminator* series involved victims of violence that were robots in human form that attacked humans but were repulsed with violent action. We also identified 2 films with brief scenes involving sexual behavior, 1 of which was rated PG-13 and the other R. The R-rated clip showed a young male character

TABLE 1 Characteristics of Films Shown in Pairs According to Content: 1 Set With Sex, Two Sets With Only Human Violence (A, B), and 1 Set With Nonhuman Victims of Violence, Resulting in 6 Different Orders of Film Content

Film	Paired Clips	Content	Length(s)	Rating	Year of Release	Percent Previously Seen
8 Mile	1	Sex	30	R	2002	45
Casino Royale	1	Sex	42	PG-13	2006	48
Collateral	2A	Violence	30	R	2004	45
Taken 2	2A	Violence	18	PG-13	2012	42
Die Hard	2B	Violence	15	R	1998	50
Live Free or Die Harder	2B	Violence	18	Unrated	2007	46
Terminator	3	Nonhuman victim	59	R	1984	49
Terminator Salvation	3	Nonhuman victim	37	PG-13	2009	46

initiating sex with a female, whereas the PG-13 film showed a female character initiating less explicit sex with a male. All of the films were among the top-25 grossing movies in the year of their release (see <http://www.annenbergpublicpolicycenter.org/test-videos-for-parent-study/>), and between 42% and 50% of the parents in the sample reported previous exposure to the films.

Experimental Procedure

Parents were shown 3 pairs of clips in a random order. The order within each pair was also random, containing a clip either from a film rated PG-13 or R/Unrated. Half of the parents saw 1 pair of the 4 human violence clips, and the other half saw the other pair. All parents saw the 2 sex and the 2 violent clips with non-human victims. This design enabled us to determine order effects for both sex and violence, with more power to study effects of violence than of sex.

We told parents, “We will show you short scenes from movies and ask you to tell us how you feel about children and adolescents viewing those films.” After viewing each clip, they were asked a series of questions about the film from which the clip was taken. Here we focus on the question: At what age do you think it would be ok for a child to see the movie from which this clip was taken? Choices ranged from age 6 to 19 years. A second question regarding the likelihood that parents would allow their target child to view the film in the future was also asked. Parents also reported whether they had previously seen the movie from which the clip was taken. After rating all the clips, parents reported how many movies they watched on television or a computer in the past week, including broadcast, cable, and video streaming. They also completed a 3-item parental monitoring scale (Cronbach $\alpha = 0.85$) that queried their practices regarding the target child's whereabouts and behavior outside the

home.¹⁶ The survey took about 20 minutes and was deemed exempt from review by the University of Pennsylvania Institutional Review Board.

Analysis

Mixed-effects regression using Stata 13 (Stata Corp, College Station, TX) was used to analyze trends in age appropriateness across the 6 movie-clip presentations, with parent and child characteristics as predictors. This analysis allowed us to test the effects of consecutive presentations of either violent or sexual content as well as differences in parent and target child characteristics.

RESULTS

Demographic characteristics of the sample (Table 2) indicate that most of

the participants were married biological parents and 56% were mothers.

Violence

Table 3 contains the mean ages reported by parents after viewing violent movies by presentation order, and various child and parent characteristics. Preliminary analyses revealed that the violence clips were rated equivalently for age appropriateness, including the ones involving non-human characters. Hence, we collapsed the ratings for the 6 violent films at each presentation order.

Preliminary analyses on the sample's mean age ratings by presentation order indicated that a quadratic function provided extremely good fits (R^2 values ≥ 0.97), the results of which we show in the Figure 1. Analyses shown in Table 4 revealed that presentation order (linear

TABLE 2 Percentages of Sample According to Parental and Child Characteristics by Age of the Target Child

Parent Characteristic	Age of Target Child, y			Total
	6 to 9	10 to 12	13 to 17	
Marital status				
Married	70.8	75.1	71.6	72.4
Single	12.6	8.3	8.8	9.8
Living with partner	9.3	4.7	7.8	7.3
Divorced/other	7.3	11.9	11.9	10.5
Relation to child				
Mother	61.1	53.8	54.5	56.3
Father	28.9	34.6	33.2	32.2
Grandparent	4.7	4.3	3.8	4.2
Other	5.3	7.3	8.5	7.3
Age, y				
18 to 34	43.5	20.3	12.3	24.1
35 to 44	37.2	46.2	31.7	37.7
45+	19.3	33.6	56.0	38.2
Child gender				
Male	49.1	51.9	54.0	51.9
Female	50.9	48.1	46.0	48.1
Education				
<High school	1.6	1.6	2.5	2.0
High school	15.6	16.3	18.8	17.1
Some college	35.9	38.2	43.0	39.4
Bachelor degree	33.6	29.9	20.6	27.3
Post-graduate degree	13.3	14.0	15.1	14.2
Race/ethnicity ^a				
White	83.7	87.0	87.4	86.2
Black	9.0	7.6	6.8	7.7
Hispanic	11.0	13.0	10.3	11.3
Asian	4.0	2.7	5.3	4.1
Other	3.3	4.3	1.3	2.8

a Racial/ethnic categories can overlap.

TABLE 3 Mean Ages Assigned to Movies With Either Violence or Sex by Age of Child, Order of Presentation, Parental Monitoring, Number of Movies Seen Before, Child Gender, Number of Movies Watched Past Week, and Parent Age

Predictor	Age of Child, y							
	6 to 9		10 to 12		13 to 17		Total	
	Violence	Sex	Violence	Sex	Violence	Sex	Violence	Sex
Order								
1	16.7	17.0	16.8	17.2	17.1	17.4	16.9	17.2
2	15.5	15.8	16.0	15.9	16.0	16.5	15.8	16.1
3	14.6	14.3	14.9	15.0	15.3	15.3	15.0	14.9
4	14.5	14.2	14.5	14.7	14.9	15.1	14.7	14.6
5	13.7	13.3	13.6	13.8	14.3	14.7	13.9	14.0
6	13.4	13.5	13.7	13.6	14.4	14.5	13.9	14.0
Total by age	14.7	14.8	14.9	15.1	15.3	15.6	15.0	15.2
Parental monitoring ^a								
Low	14.7	14.3	14.4	14.6	15.3	15.7	14.9	15.1
Medium	14.7	14.9	15.1	15.3	15.3	15.4	15.1	15.3
High	14.8	14.9	15.0	15.1	15.5	15.7	15.0	15.2
Movies seen before								
None	16.1	16.0	16.8	16.0	16.6	16.6	16.5	16.2
1 to 2	15.1	15.2	15.0	15.3	15.5	15.9	15.3	15.5
3 to 5	14.4	14.4	14.7	14.9	15.0	15.2	14.7	14.9
6	13.7	13.8	12.9	13.9	14.5	15.0	13.7	14.2
Child gender								
Male	14.6	14.4	14.9	14.9	15.2	15.4	15.0	15.0
Female	14.8	15.1	14.9	15.2	15.5	15.8	15.1	15.4
Recent movies watched								
None	15.4	15.5	15.6	15.9	15.8	15.9	15.7	15.8
1 to 2	14.7	14.9	15.1	15.6	15.4	15.8	15.1	15.4
3 to 4	15.1	14.9	14.7	14.7	15.2	15.5	15.0	15.1
5 to 10	14.2	14.0	14.8	14.8	15.1	15.1	14.7	14.7
11+	14.3	14.8	13.4	13.2	15.1	15.3	14.1	14.2
Parent age, y								
18 to 34	14.2	14.5	14.1	14.2	15.1	15.4	14.4	14.6
35 to 44	15.1	14.8	15.1	15.2	14.9	14.9	15.0	15.0
45+	15.1	15.3	14.9	15.4	15.6	16.0	15.4	15.7

^a Trichotomized into approximately equal proportions of the sample.

and quadratic terms), parental monitoring, and previous exposure to the films were related to age appropriateness. Age judgments declined as a function of presentation order with the quadratic term reducing the effect of successive exposures (Fig 1). Parents who had previously seen more of the clips were less restrictive overall. They were also more likely to have watched more movies in the past week ($r = 0.28$). The constant term in the model when adjusted for other predictors represents the age that parents assigned to the first clip (16.9 years; 95% CI, 16.8 to 17.0). With each succeeding clip, however, parents reduced their age judgment by a little over 1 year, until the quadratic term became large enough to reduce the order effect.

The interaction between order and parent age indicated that older parents were less subject to desensitization (Fig 1A). In addition, the more movies parents had watched in the past week, the less restrictive they were as they saw additional clips (Fig 1B). In particular, those viewing 11 or more movies rated the first clip at age 16.6 years (95% CI, 15.6 to 17.6) but the last 1 at age 12.0 years (95% CI, 11.0 to 13.0). For parents who viewed fewer movies, the effect of order was weaker. Parents who viewed no movies rated the last clip at age 14.8 years (95% CI, 14.2 to 15.4), whereas those who viewed between 3 and 4 movies rated the final clip at age 13.9 years (95% CI, 13.5 to 14.3). Target child's gender did not influence parents' age judgments, nor did parent

education and income. Analysis of the random effects (not shown) indicated that parents who assigned older ages to the first clip displayed greater desensitization as they watched subsequent clips.

Sex

Table 3 contains the mean ages reported by parents for the average of the 2 movies containing sex. Like violence, order of presentation (linear and quadratic terms) was related to judgments of age appropriateness (Table 4). Parents rated the first sexual clip at age 17.2 years (95% CI, 17.0 to 17.4) and the last at age 14.0 years (95% CI, 13.7 to 14.3). Previous exposure to the films was also inversely related to age judgments. Unlike violence, the target child's gender and age mattered for sex. Parents were more restrictive if their target child was older (Fig 1C) or female (Fig 1D). Parents who monitored their children more closely were also more restrictive. However, age of child or gender did not interact with order of presentation.

Like violence, parent age interacted with presentation order such that older parents were less subject to desensitization. Unlike violence, movie-watching experience did not interact with order of presentation. Nevertheless, it is clear that desensitization to sex occurred not only when the 2 sex clips were shown in the first 2 positions, but also when they followed clips with violent content.

Desensitization to violence occurred even when sexual clips preceded violent ones. Age judgments in response to violence in the third and fourth positions were rated equivalently regardless of whether the first 2 clips contained sex or violence (data not shown).

Unlike the random component results for violence, initial age judgments were positively related to order, indicating that parents who started out more restrictive exhibited less desensitization for sexual content as they watched more clips.

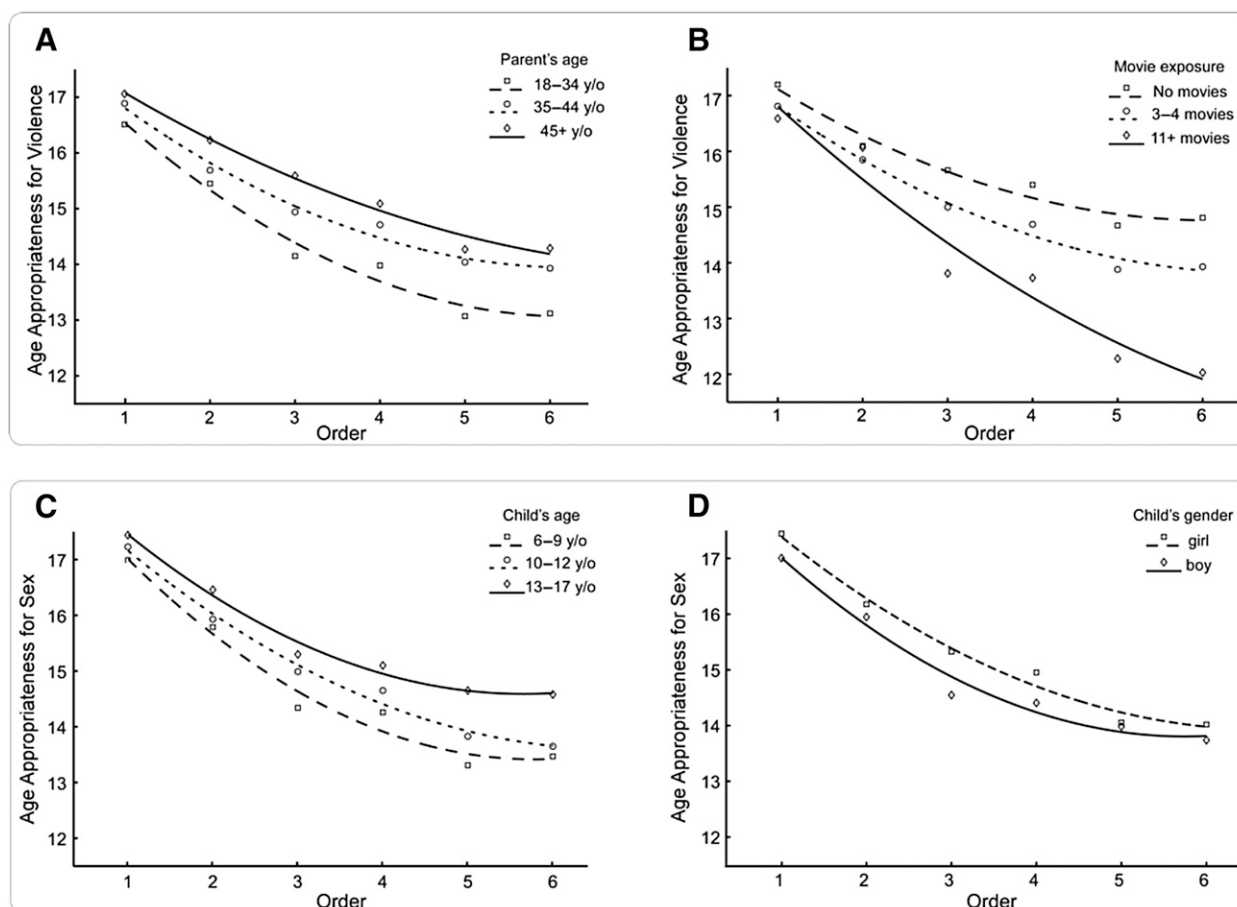


FIGURE 1

Best fitting curves ($R^2 \geq 0.97$) for age appropriateness by order of presentation for violence according to A, parents of different ages and B, parents with different amounts of movie watching, and for sex according to C, children of different ages and D, gender.

Target Child Viewing

Likelihood of allowing the target child to view the films was inversely correlated with age judgments (r 's = -0.45 and -0.47 for violence and sex, respectively). In addition, linear and quadratic order

effects were evident with greater leniency as exposures progressed (see Tables 5 and 6). A major difference was that the age of the child played a stronger role than the age of the parent for both violence and sex, with

parents being less restrictive for older children.

DISCUSSION

When parents viewed film clips containing either violence or sex that might

TABLE 4 Fixed Effects in Regression Analysis of Age Appropriateness for Violent and Sexual Movies

Predictor	Violence			Sex		
	Coefficient	95% CI	Probability	Coefficient	95% CI	Probability
Linear order	-1.29	-1.48 to -1.11	<0.001	-1.80	-2.10 to -1.50	<0.001
Quadratic order	0.09	0.07 to 0.11	<0.001	0.15	0.12 to 0.18	<0.001
Child age	0.16	-0.00 to 0.32	0.055	0.35	0.18 to 0.53	<0.001
Child gender ^a	0.00	-0.24 to 0.25	0.985	0.37	0.10 to 0.63	0.006
Parental monitoring	0.16	0.00 to 0.31	0.051	0.21	0.04 to 0.38	0.015
Movies seen before	-0.57	-0.72 to -0.41	<0.001	-0.55	-0.72 to -0.37	<0.001
Parent age	0.15	-0.06 to 0.35	0.162	0.00	-0.31 to 0.32	0.976
Recent movies	-0.03	-0.17 to 0.12	0.737	-0.12	-0.34 to 0.10	0.294
Watched	0.06	0.01 to 0.11	0.024	0.08	0.00 to 0.17	0.041
Order \times parent age						
Order \times movies watched	-0.04	-0.08 to -0.01	0.020	-0.02	-0.08 to 0.05	0.624
Constant	18.25	17.5 to 19.0	<0.001	18.69	17.7 to 19.7	<0.001

a Coded as male = 1 and female = 2.

TABLE 5 Mean Ratings of Likelihood of Allowing Target Child to View Movies With Either Violence or Sex by Age of Child, Order of Presentation, Parental Monitoring, Number of Movies Seen Before, Child Gender, Number of Movies Watched Past Week, and Parent Age

Predictor	Age of Child, y							
	6 to 9		10 to 12		13 to 17		Total	
	Violence	Sex	Violence	Sex	Violence	Sex	Violence	Sex
Order								
1	1.96	1.65	2.08	1.81	3.20	2.73	2.49	2.10
2	2.37	2.16	2.77	2.56	4.18	3.87	3.22	2.92
3	2.72	2.63	3.20	3.13	4.51	4.23	3.57	3.41
4	2.92	2.68	3.46	3.39	4.82	4.50	3.84	3.61
5	3.18	3.16	3.98	3.90	5.13	5.16	4.17	4.22
6	3.11	3.02	3.85	3.97	4.93	5.12	4.02	4.18
Total by age	2.72	2.52	3.23	3.12	4.45	4.30	3.56	3.40
Parental monitoring								
Low	3.25	2.92	3.60	3.41	4.46	4.38	3.93	3.77
Medium	2.78	2.39	3.11	2.94	4.49	4.33	3.69	3.48
High	2.48	2.41	3.10	3.09	4.35	4.13	3.15	3.06
Movies seen before								
None	1.89	1.76	2.00	2.38	3.40	3.22	2.57	2.57
1 to 2	2.20	2.11	3.07	2.77	3.99	3.98	3.18	3.06
3 to 5	2.96	2.74	3.46	3.42	4.92	4.68	3.88	3.71
6	4.25	3.67	4.17	3.70	5.42	5.31	4.63	4.24
Child gender								
Male	2.94	2.67	3.27	3.31	4.63	4.56	3.74	3.64
Female	2.54	2.39	3.21	2.94	4.21	3.98	3.38	3.16
Recent movies watched								
None	1.97	2.26	2.81	2.32	3.85	3.90	3.11	3.08
1 to 2	2.72	2.35	3.01	2.75	4.31	4.15	3.39	3.13
3 to 4	2.66	2.48	3.42	3.38	4.49	4.16	3.66	3.46
5 to 10	3.00	2.89	3.23	3.45	4.99	5.04	3.81	3.87
11+	3.58	2.77	4.21	4.03	4.98	4.15	4.20	3.67
Parent age, y								
18 to 34	3.00	2.62	3.61	3.71	4.42	4.38	3.44	3.26
35 to 44	2.56	2.51	3.13	3.08	4.72	4.62	3.49	3.42
45+	2.42	2.29	3.12	2.82	4.30	4.11	3.70	3.49

Parents were asked, "How likely is it that you would allow (target child) to see this movie in the future?" Response options ranged from extremely unlikely (1) to neither unlikely or likely (4) to extremely likely (7).

be inappropriate for children, desensitization was clearly evident even within the short duration of this study. As suc-

cessive clips were seen, movies regarded as only appropriate for older adolescents soon became more acceptable for

younger ages. The order effect occurred regardless of whether the violence was directed at a human or a human-like character and regardless of the film's rating. Desensitization also occurred for sexual content, not only when the 2 sexual clips were shown first, but also later in the viewing sequence, indicating transfer from violence to sex. In addition, there was no difference in response to violent clips whether they were preceded by sexual content or not. These patterns suggest that desensitization is possible not only within but also across violent and sexual content.

The results support the operation of a very basic reduction in emotional response produced by repeated exposures to sex and violence. Desensitization has also been found to transfer from fictional media to real-life violence.^{8,11} Although the arousal produced by both sexual and violent content probably played a role, it is likely that the disturbing nature of the content contributed to the transfer between violence and sex. One study that compared repeated exposure to arousing comedic versus violent film clips found a much weaker and different pattern of desensitization in response to comedic clips, suggesting that arousal is not sufficient to produce desensitization.¹⁵ Other research reached the same conclusion.¹⁸

TABLE 6 Fixed Effects in Regression Analysis of Likelihood of Allowing Child to View Either Violent or Sexual Movies in the Future

Predictor	Violence			Sex		
	Coefficient	95% CI	Probability	Coefficient	95% CI	Probability
Linear order	0.80	0.68 to 0.93	<0.001	1.05	0.88 to 1.24	<0.001
Quadratic order	-0.08	-0.09 to -0.06	<0.001	-0.10	-0.12 to -0.08	<0.001
Child age	0.73	0.56 to 0.90	<0.001	0.49	0.26 to 0.73	<0.001
Child gender ^a	-0.17	-0.35 to 0.01	0.069	-0.32	-0.52 to -0.11	0.002
Parental monitoring	-0.19	-0.31 to -0.08	0.001	-0.21	-0.33 to -0.08	0.002
Movies seen before	0.61	0.48 to 0.73	<0.001	0.54	0.41 to 0.68	<0.001
Parent age						
Recent movies	-0.10	-0.22 to 0.30	0.133	-0.11	-0.25 to 0.03	0.141
Watched	0.04	-0.08 to 0.17	0.488	0.11	-0.07 to 0.28	0.238
Order × child age	0.05	0.01 to 0.09	0.007	0.11	0.05 to 0.17	<0.001
Order × movies watched	-0.04	0.01 to 0.06	0.021	0.01	-0.04 to 0.06	0.724
Constant	1.49	0.92 to 2.07	<0.001	1.20	0.53 to 1.88	<0.001

a Coded as male = 1 and female = 2.

We also found that the more movies parents had watched in the past week, the less restrictive they became as exposure to violent clips progressed. In addition, previous exposure to the movies shown, which was related to frequency of movie viewing, was a predictor of greater leniency for both violence and sex. These findings support the view that not only does desensitization occur in the study's short time frame, but that it can also accrue over time, so that parents become less disturbed by violent and sexual content in movies the more they view it.

The finding that desensitization to violence can also extend to sex suggests that the recent rise in violent films in the PG-13 category² may also have influenced the way parents evaluate films with sex. This conclusion is consistent with declining reported parental concern about both violence and sex in films.¹⁵ In short, recent increases in film violence may have made parents more tolerant of both violence and sex in movies.

The wide variation in response to these films underscores the challenges that any global rating system faces in providing parents useful information about film content.¹⁹ Older parents were less sensitive to presentation order for both violence and sex, perhaps because they have stronger emotional reactions to the explicit content in these films. In addition, parents of all ages were more likely to consider their own child's age and gender in response to sex, recommending greater restriction when they had older or female children. Nevertheless, when it came to deciding what their own children should watch in the future, parents of older children appeared to recognize that their children would soon be mature enough to view the films.

The finding that violence directed against human-like characters elicited the same response as violence directed

toward humans suggests that it is the violent act itself that parents found disturbing. Indeed, responses to the films did not differ despite different ratings for either sex or violence. These broad results suggest that desensitization may have far-reaching effects. As parents become inured to violence and sex in films, they will be less likely to shield their children from such content. Children may then also become desensitized to violence, which could reduce their empathy for the suffering of others^{11,12,20} and encourage aggressive responses to conflict.^{21,22} Exposure to sex may also lead to early sexual initiation²³ as well as increased risk for teen pregnancy.²⁴

Although our findings may not extend to CARA's behavior, CARA board members are also parents selected to represent families across the country.¹ Given that they preview and rate hundreds of films a year,²⁵ they could also be desensitized to disturbing content in films and thus more likely to be lenient when it comes to evaluating the appropriateness of such content for children.⁵ This could help to explain the ratings creep that has occurred in films containing violence over the past 20 years. As the industry has pushed for the PG-13 rating, especially for violent films that draw large audiences in the United States and abroad, parents as well as CARA may have become more accepting of violent content. As a result, our entire culture may be undergoing desensitization to violent movies with consequences that remain unknown. One possible outcome of this desensitization is the greater acceptance of the use of guns, which are heavily featured in violent PG-13 movies.² Indeed, use of guns in violent acts has increased in US youth over the past decade.²⁶ Considering that movies may enhance associations between guns and violence,^{2,27} the effects on children's exposure to violent use of weap-

ons in movies remains surprisingly unstudied.²⁸ The present findings suggest that this should be a high priority for future research.

An alternative explanation for our findings is that viewing any series of movie clips would result in more tolerance of the portrayed behavior. However, this seems unlikely, because neutral clips would presumably be acceptable for children at a much younger age than 17 years, the approximate age suggested for all of the studied clips when they were first viewed. Thus, even if there were some effects on age judgments owing to repeated viewing, it is unlikely that they would produce the steep age decline observed in this study.

Despite the clear findings, we also recognize some limitations that invite further research. Because of concerns regarding respondent burden, we did not measure participants' emotional reactions to each film clip. Thus, we do not have direct evidence that emotional reactions declined over successive viewings. However, earlier research has established that emotional reactions are less intense with repeated viewings of violence.^{8,18,29} With the exception of pornography,¹⁴ less is known about repeated viewings of sex and its effects on subsequent viewing of violence. In addition, we did not expose parents to as many clips containing sex as violence. Thus, we have less confidence in the generality of the findings regarding sexual content.

Our sample was drawn from a national panel that is not necessarily representative of parents in the United States. However, characteristics such as education and income were not related to desensitization. Furthermore, our study was not designed to determine national rates of tolerance to movie violence and sex, but rather to determine whether parents across a wide range of characteristics would exhibit a systematic pattern of desensitization to

violent and sexual content over repeated viewings.

CONCLUSIONS

The findings suggest that desensitization to films with violent or sexual content poses major challenges for the assign-

ment of film ratings. CARA raters who presumably see many films in a week may be subject to desensitization that affects their ratings. At the same time, parents may also be more accepting of lenient ratings as they are repeatedly exposed to films with violent or sexual

content. and may be more willing to allow their children to view it.

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