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WHAT MATTERS IN MOVIE RATINGS? CROSS-COUNTRY DIFFERENCES IN HOW CONTENT INFLUENCES MATURE MOVIE RATINGS

Joseph Price, Craig Palsson and Doug Gentile

We examine the weight that the USA and other countries place on different types of movie content when assigning movies a mature rating. We use data on the international movie ratings for over 1,000 movies reviewed by either Screen It or Kids in Mind, two companies that provide measures of different types of movie content. Among English-speaking countries, the United States is unique in that, it places the most weight on profanity but the least weight on violence. Across all countries, the USA and Asian countries place the largest weight on sex, while Scandinavian countries place the least weight on sex but the largest weight on violence. The approach the USA takes toward assigning mature ratings is puzzling since, of the three types of content, violence has the strongest body of evidence to document harm to children.

KEYWORDS movies; ratings; content; sex; violence; profanity

Nearly every American parent believes that exposure to media violence contributes to increased aggression in children and that sexual content contributes to children becoming involved in sexual situations before they are ready (Rideout, 2004). Most parents also believe that it is important to protect their children from exposure to explicit or graphic violent or sexual content (Gentile, Maier, Hasson, & Lopez de Bonetti, 2011; Nathanson, Eveland, Park, & Paul, 2002). Moreover, over 97% of pediatricians believe that media can influence academic achievement, aggression, sexuality, and high-risk behaviors (Gentile et al., 2004). As a result, many countries have developed movie rating systems to inform viewers and parents of the type of content in each movie. These ratings are often coupled with restrictions on age groups, thus preventing children from accessing potentially harmful content without an adult guardian present. In such ratings systems, age is the primary factor for determining who can view a movie with a restrictive rating.

In this paper, we look specifically at the decision to assign a mature rating that restricts certain ages from attending the movie without an accompanying adult or the equivalent of the R-rating in the USA. In determining the criteria used to rate movies, ratings boards need to decide the relative weight to place on different types of mature content. Presumably these weights should be guided by the types of content that actually harm children or influence the viewer in a negative way. Data with US television ratings, however, suggest that this is not the case (Kunkel et al., 2001). In this paper, we examine the

weight the USA and other countries place on different types of content when assigning movies a mature rating.

We construct a dataset that includes over 3,000 movies receiving MPAA ratings in the USA between 1993 and 2011 and combine this with data from the Internet Movie Database on the rating that each of these movies received in any countries for which the movie was rated. We also use data from both Kids in Mind (www.kids-in-mind.com) and Screen It (www.screenit.com) that provide objective measures of the amount of specific content in each movie (sex, violence/gore, and profanity). We combine the data on the different content measures with the rating the movie received in various countries in the Internet Movie Database (imdb.org) to examine the degree to which the specific content measures influence whether a movie received a mature rating.

Movie Ratings

A decline in government censorship of movies in the 1950s shifted the burden of protecting children from potentially harmful content from the government to parents. The movie ratings system in the United States was designed to inform parents of movie content and restrict children from seeing mature content without adult supervision or guidance. The stated goal of the MPAA rating system is to “help parents make informed decisions about what their kids are watching whether it’s in the theater, at home or online” (Motion Picture Association of America (MPAA), 2012). While each country’s system is similar, the specific ages associated with different levels of ratings vary from country to country. For example, the USA has age demarcations at ages 13 and 17, whereas Japan has similar demarcations at ages 12, 15, and 18. Also, certain ratings simply provide basic guidance to individuals while other ratings are accompanied by restrictions on which age groups can see the movie without an accompanying adult.

Whatever the approach, a reliable, consistent, and accurate movie rating system is a very important tool to empower parents concerned about their children’s access to potentially harmful content. Although parents differ in their feelings about which types of content have the most impact on their children, there is much more evidence of the negative psychological effects of exposure to violence than of exposure to sex or profanity (Huston, Wartella, & Donnerstein, 1998; Coyne, Stockdale, Nelson, & Fraser, 2011).

Over 50 years of research have documented multiple effects of violent media on youth (Bushman & Huesmann, 2006; Gentile, 2003; Potter, 1999). Hundreds of studies have been conducted using multiple methods. Each research method has its unique strengths and weaknesses, yet across the different methods there is a convergence of evidence in meta-analytic reviews of each methodology (e.g., Anderson & Bushman, 2001; Anderson et al., 2010; Comstock & Scharrer, 2003; Paik & Comstock, 1994). Experimental studies demonstrate that exposure to media violence causes people to have more positive attitudes about aggression and to behave more aggressively immediately afterwards. For example, Berkowitz and Rawlings (1963) showed that violent movie scenes led to justification of personal aggressive behavior. Experimental studies have been criticized for their somewhat artificial nature, but field experiments have produced similar results in more realistic settings (Friedrich & Stein, 1973; Leyens, Camino, Parke, & Berkowitz, 1975; Friedrich-Cofer & Huston, 1986). However, it is not so much the immediate effects of media violence exposure that are of concern, but rather the aggregated long-term effects.

Longitudinal studies offer evidence of a relationship between media violence exposure as a child and aggressive and violent behavior many years later as an adult.

In contrast, the effects of sexual content and profanity in movies have been examined in only a few studies, and much less evidence exists regarding these two subjects (Brown, 2009; Brown et al., 2006; Coyne et al., 2011; Cressman, Callister, Robinson, & Near, 2009; Huston et al., 1998). Although there is less evidence, most of it also fits with basic learning theories—that is, humans are excellent at learning from what they see. When youth watch sexual content, they tend to have more permissive attitudes about casual sex and are more likely to initiate sex at younger ages (see Wright, Malamuth, & Donnerstein, 2012 for a review). Similarly, youth who consume more media with offensive language also are more willing to use offensive language (e.g., Linder & Gentile, 2009).

Despite a greater body of evidence finding potentially harmful effects of media violence than sexual media, the US ratings tend to treat violence and sex differently. Leone (2002) content analyzed 210 sequences that were removed from NC-17 films in order to secure an R-rating. He found that significantly more sexual sequences were removed from these films than violent sequences were. In a subsequent study, Leone (2004) analyzed the rating descriptions of fifty-two R-rated and NC-17 rated films. He found that violence was mentioned in 81% of the R-rated movie descriptions but in only 31% of the supposedly more explicit NC-17 descriptions. In contrast, sexuality was mentioned in 58% of the R-rated descriptions and 96% of the NC-17 descriptions. Based on these two studies, Leone argued that the MPAA ratings employ a double standard and that violence is treated more liberally than is sex in assigning labels to films.

Past research suggests that the MPAA should more carefully consider the body of research on media content's effects on children when making ratings decisions. Current MPAA ratings vary considerably in the reasons any particular rating was given. Movies with the same rating may have significantly different levels of violent, sexual, or profane content. Many critics have noted a lack of consistency and a surprisingly diverse range of content that can fit within a single rating category. For example, after the film *Billy Elliot* received an R rating in the USA for multiple uses of a swear word, one critic wrote, "... it seems reasonable to wonder why a film like *Billy Elliot*—which doesn't feature any sex, extreme violence, or mature themes—should get the same rating as ... *8MM* (full of some of the most disturbing imagery this side of hell)" (Tharps, 2000, p. 24). Researchers have noted that the existing US media ratings are generally based more on what is considered offensive than on what is likely to be harmful to children (Kunkel et al., 2001; Wilson, Linz, & Randall, 1990). However, if parents' main goal is to protect their children from harm, then what is culturally unacceptable or offensive may not be particularly relevant to their decision making, especially given the evidence that both violent and sexual content can influence youth (e.g., Anderson & Bushman, 2001; Brown, 2009). If the ratings favor one type of content over another, this would be evidence of a lack of usefulness for parents.

Also, there is a noticeable "ratings creep," where movies with similar content receive less restrictive ratings over time – forcing parents to recalibrate the ratings they are willing to let their children see (Leone & Barowski, 2011). The rating system is neither accurately nor consistently reflecting the content in movies. Thompson and Yokota (2004) compared the MPAA ratings of 1,269 movies with the two independent content-based rating systems we use here (Screen-It! and Kids-in-Mind). Although the two rating systems correlated very highly with each other ($r=0.83$), there was considerably less agreement when comparing these two content-based systems with the MPAA age-based ratings or with the MPAA's

content descriptors. The MPAA has consistently claimed that a majority of parents approve of their ratings, but the bar seems to have been set very low – the data show that about 75% of parents say the ratings are “very useful” or “fairly useful” (Wallace, 1999). If ratings were based on evidence from studies about the impact of movie content on children, parents would have a consistent metric on which to base their decisions about which movies to let their children watch, thus allowing parents to avoid the uncertainty of inconsistent, seemingly subjective ratings.

Methods

Data

We used specific measures of movie content using data from two online sources: Kids in Mind and Screen It. The content measures provide an indicator of the quantity and intensity of specific types of content in each movie. While Kids in Mind rates three categories (sex, violence, and profanity) on a 0 to 10 scale, Screen It rates fifteen categories (including sex, violence, gore, and profanity) on a six-point scale ranging from none to extreme. For this paper, our primary focus was on the data from Kids in Mind, which covers 3,168 movies from 1993 to the present, but we also included the data from Screen It which covers 2,709 movies as an additional check on our main results. Since Screen It provides a separate measure for violence and gore, we averaged these two measures together to make it comparable to the violence measure used by Kids in Mind.

For each of these movies, we used data on international ratings from the Internet Movie Database and merged it with our content measures based on the movie’s title and the release year. We focused on the twenty-six countries that have the equivalent to an R-rating; that is, countries where restrictions require certain age groups to attend the movie with an adult in order to view the movie, and refer throughout to these movies as having a mature rating. For countries that have multiple ratings with different age-cutoffs we used the rating with an age-cutoff closest to 17 (the age used in the USA). We used this mature rating measure as the dependent variable in our logit regressions.

In [Table 1](#), we reported some basic information about the twenty-six countries in our full sample including the age-cutoff used for the mature rating, the number of movies in our sample that received a movie rating in that country, and the proportion of those movies that received the mature rating. The numbers in this table illustrate that standards vary considerably across countries. For example, there is a large difference in the fraction of movies that receive a mature rating in Peru (63%) and France (4%). Even if we restrict the sample to just the set of movies that received a rating in both Peru and France, the difference is even larger (70% vs. 2%). However, it is important to note that about 94% of the movies in our sample were made in the USA and then distributed to other countries, so the proportion of mature movies from our sample may not accurately reflect the entire population of movies that are released in theatres in each country.

Validation of Content Scores

A clear benefit of using data from Kids in Mind and Screen It is that they provide ready access to content measures for thousands of films. Both websites have a small staff of reviewers with only one reviewer providing the content measures of each movie. Reviewers

TABLE 1
Equivalent ratings by country

Country	Age cutoff	<i>Kids in Mind</i>		<i>Screen It</i>	
		Obs.	Proportion Mature	Obs.	Proportion Mature
Britain (GB)	15	2,568	0.42	2,177	0.44
Australia (AU)	15	2,893	0.22	2,517	0.25
Argentina (AR)	15	2,520	0.21	2,220	0.22
Denmark (DK)	15	468	0.34	445	0.35
Finland (FI)	15	2,111	0.23	1,922	0.26
Japan (JP)	15	620	0.25	478	0.30
Norway (NO)	15	1,380	0.49	1,258	0.49
South Korea (KR)	15	2,450	0.22	2,083	0.23
Sweden (SE)	15	2,040	0.32	1,727	0.31
Ireland (IR)	16	1,516	0.20	1,250	0.21
New Zealand (NZ)	16	1,273	0.36	1,213	0.38
Brazil (BZ)	16	1,378	0.17	1,251	0.17
France (FR)	16	1,333	0.04	1,327	0.04
Germany (DE)	16	2,281	0.24	2,041	0.24
Iceland (IS)	16	2,108	0.31	1,883	0.31
Netherlands (NL)	16	2,174	0.27	1,950	0.29
Portugal (PT)	16	2,114	0.24	1,751	0.25
Spain (ES)	16	1,546	0.25	1,333	0.24
Switzerland (CH)	16	1,319	0.14	1,222	0.16
United States (US)	17	3,168	0.43	2,709	0.46
Chile (CL)	18	876	0.10	786	0.13
Hong Kong (HK)	18	1,071	0.44	1,050	0.45
Malaysia (MY)	18	1,350	0.33	1,209	0.32
Mexico (MX)	18	474	0.13	450	0.16
Peru (PE)	18	1,178	0.63	1,029	0.64
Taiwan (TW)	18	274	0.30	272	0.29

Notes: We exclude Canada from this list because each province has its own rating system. The proportion mature is the fraction of movies in our sample for that country that received a mature rating (corresponding to the age cut-off listed for that country).

create the content measures based on detailed guidelines developed by the founder of each website. The websites provide general information about the guidelines used and note that the guidelines have changed (or improved) over time. While the lack of specific coding rules and the changes in rules over time is a clear weakness of our content measures, we provide three arguments for why the two websites we use provide valid measures of mature content.

First, the fundamental forces underlying the each websites revenue models provide a strong incentive for them to provide valid ratings. Neither website is affiliated with a religious or political organization and both rely entirely on subscription fees and advertising for their revenue. To further inoculate themselves from any influence, they do not accept ads directly but work with several ad agencies which sell ads for the websites. If consumers find the ratings to poorly reflect the content, they will not return to the website in the future, resulting in a loss of revenue to the site. Websites that provide invalid ratings would quickly see their revenues disappear, forcing them to shut down. The fact that both of the websites we use have been in business for many years (Kids in Mind was founded in 1992 and Screen It was founded in 1996) provides assurance that both have been successful in providing valid content measures over time.

Second, in addition to providing a summary measure, both websites record a detailed description of every instance in the movie related to each content measure, including an exact count of the each type of profanity. These detailed coding takes about 10 hours for a reviewer to complete. By creating a specific list of each instance of sex, violence, and profanity, the reviewer is able to assign an overall content measure based on both quantity and intensity of content in each category.

Third, the content measures from the two independent sources that we use are highly correlated with one another. In our sample, there are 2,294 movies rated by both the Kids in Mind and Screen It. Since the content measures we used are based on either a 0 to 6 or 0 to 10 scale, we calculated the Spearman's Rho to measure the correlation between the two sources. Screen It and Kids in Mind show the highest correlation for profanity (0.896), followed by sex (0.863) and violence/gore (0.820). The lower correlation for violence is due in part to the fact that Screen It separates violence and gore while Kids in Mind combines them into one score. Nonetheless, these correlations indicate a high level of agreement between the two content rating approaches. Using the correlation between two independent measures to establish the validity of a particular measure is similar in nature to the approach used in past studies that establish the inter-rater reliability of their content measures by having multiple coders evaluate the same set of movies (Nalkur, Jamieson, & Romer, 2010; Tickle, Beach, & Dalton, 2009; Pardun, L'Engle, & Brown, 2005; Jenkins, Webb, Browne, Affi, & Kraus, 2005).

Content and Ratings

The primary goal of this paper is to examine the degree to which countries place greater weight on certain types of content when assigning movies a mature rating. We used a logit regression in which the dependent variable is whether or not the movie received a mature rating in a particular country. As a control variable we included a measure of the level of each type of mature content in the movie. Since the numbering system assigned by Screen It and Kids in Mind does not have a natural interpretation, we standardized each of the content measures to have a mean of zero and standard deviation of one. We also included a linear trend for the year that movie was released to capture the amount of "ratings creep" in each country (or the tendency for movies with similar amounts of mature content to receive less restrictive ratings over time).

We ran the regression separately for each of the countries in our sample and report the average marginal effects for each of the content measures. As such, the interpretation of each coefficient is the increase in the probability of a movie getting a mature rating associated with a standard deviation increase in one of the content measures (controlling for the other content measures and characteristics of the movie). We found very similar results when using the raw content measures but used the standardized measures in our tables to make the results across content measures comparable. To provide a statistical test for whether the weights assigned to different content measures differ between countries, we pooled the data from the five English-speaking countries in our sample into a single regression and included interaction terms between each country and each of the content measures. We don't report the coefficients from these interactions but highlight in bold each of the coefficients that are statistically significantly different from the US coefficient (at the 5% level).

Results

We start by looking at the five English-speaking countries in our sample (USA, Britain, Ireland, Australia, New Zealand), since this is the most relevant group to use to provide some insight about the role of profanity in movie ratings shown in previous research (Palsson, Price, & Shores, 2013). Each column in Table 2 provides the results from a separate regression for each country with the same set of movies used across each of the regressions. We used a common set of movies to ensure that our results are not driven simply by selection on which movies are rated by each country. This selection turns out to not be that much of a concern since the estimated weights that we find in Table 2 are nearly identical if we use the full set of movies rated by each country. We also report our results separately for our two sources of content measures (Kids in Mind and Screen It).

The results in Panel A of Table 2 indicate that the United States and United Kingdom place the largest weight on profanity of the English-speaking countries. In both of these countries, a standard deviation increase in the measure of profanity increases the probability of a movie getting a mature rating by about 25%. This increase is more than twice as large as the increase associated with a standard deviation rise in sex or violence. For both of these countries, the negative coefficient on the year variable indicates that, holding all other content equal, a movie is 1–2 percentage points less likely to receive a mature rating if released a year later, providing evidence that both of these countries

TABLE 2
Determinants of a mature rating in English-speaking countries

	US (17)	GB (15)	Ireland (16)	Australia (15)	New Zealand (16)
A. Kids in Mind					
Sex	0.103** [0.015]	0.095** [0.015]	0.090** [0.014]	0.078** [0.015]	0.086** [0.013]
Violence/Gore	0.116** [0.014]	0.132** [0.015]	0.700** [0.015]	0.133** [0.015]	0.155** [0.013]
Profanity	0.279** [0.024]	0.268** [0.021]	0.075** [0.013]	0.147** [0.016]	0.123** [0.014]
Year	−0.009** [0.003]	−0.012** [0.003]	0.011** [0.003]	0.004 [0.004]	0.004 [0.004]
N	655	655	655	655	655
B. Screen It					
Sex	0.085** [0.017]	0.065** [0.016]	0.075** [0.020]	0.045* [0.019]	0.064** [0.018]
Violence/Gore	0.091** [0.013]	0.111** [0.014]	0.047** [0.015]	0.111** [0.015]	0.122** [0.015]
Profanity	0.234** [0.018]	0.208** [0.013]	0.167** [0.029]	0.225** [0.026]	0.206** [0.028]
Year	−0.015** [0.004]	−0.016** [0.004]	−0.012** [0.004]	0.001 [0.005]	0.007 [0.004]
N	614	614	614	614	614

Notes: In each of the regressions, the dependent variable is a binary indicating whether the movie received a mature rating. Age cutoffs are shown in parentheses beneath the country name. Each column is a separate logit regression. All content measures are standardized to have a mean of zero and a standard deviation of one. Coefficients in bold indicate a statistically significant difference from the coefficients in the US regression. The asterisks indicate that the coefficient is significantly different from zero (** $p < .01$, * $p < .05$).

experienced a ratings creep (in contrast, Ireland seems to have increased their standards for what constitutes a mature rating over the same time period).

In panel B of [Table 2](#), we find similar results using the Screen It data and, if anything, find even larger weight placed on profanity relative to sex or violence. Screen It provides separate measures for violence and gore which we combine into one measure to make it more comparable to the measures in the Kids in Mind data. If we include the violence and gore measures as separate values in the regression we find that the coefficient on gore is generally twice as large as that on violence indicating that the types of violence (e.g., slapstick vs. slasher) receive consideration in the rating decisions and more graphic forms receive the greater weight.

In both datasets in four of the five English-speaking countries, profanity is the strongest determinant of rating, possibly related to its more easily quantifiable nature. In New Zealand, the strongest determinant was violence in the Kids in Mind data and profanity in the Screen It data. Other similarities are evident from [Table 2](#). The USA and Britain are not significantly different from each other in any category of content or on ratings creep (which is significant in both countries, with newer films less likely to be given a mature rating). Ireland, Australia, and New Zealand all have multiple areas of difference with the USA. Ireland is less likely than the USA to give a mature rating based on profanity or gore, and has ratings that are stricter over time. Australia is less likely than the USA to give a mature rating based on sex or profanity, more likely to give it based on violence, and has almost no ratings creep. New Zealand is less likely than the USA to give a mature rating based on profanity, more likely to give it based on violence, and also has almost no ratings creep.

To provide a comparison across all twenty-six countries in our sample, we ran the same specification in Panel A of [Table 2](#) for each country and report the coefficients on the sex and violence variables in [Figure 1](#). We made two changes to the original specification. First, we remove the profanity measure from the regression for countries where the native language is not English. Second, we include the full set of movies that received a rating in each country since there are so few movies rated by all twenty-six countries. As mentioned earlier, the results for the five English-speaking countries were the same whether we used a common set of movies and we provide additional evidence in an online appendix that this is qualitatively true for the broader set of countries in our sample.

The results in [Figure 1](#) indicate that almost all of the countries place more weight on violence than they do on sex. In addition, two interesting groups of countries emerge in the figure. The first is a group of mostly Scandinavian countries (Norway, Sweden, Iceland, Netherlands, and Denmark) that place a large weight on violence but almost no weight on sex. The second is a cluster of Asian countries (Taiwan, Korea, and Japan) which place a fairly large weight on sex relative to all other countries.

A major advantage of our multivariate approach allows us to estimate the effect of sexual content holding the amount of violent content constant and vice versa. In many cases, a single type of content of a certain level may suffice to trigger a mature rating. In fact, when we limit our analysis to a set of movies that have low levels of violence, we find a similar pattern of Asian countries placing a high weight on sexual content and Scandinavian countries placing a low weight. When instead we focus on a set of movies with a low level of sexual content, we find that weights placed by the Scandinavian countries on violent content are more than double that of the Asian countries.

Another potential issue is that weights that countries use when assigning a mature rating may differ based on the age cut-off that is used to restrict access to mature movies.

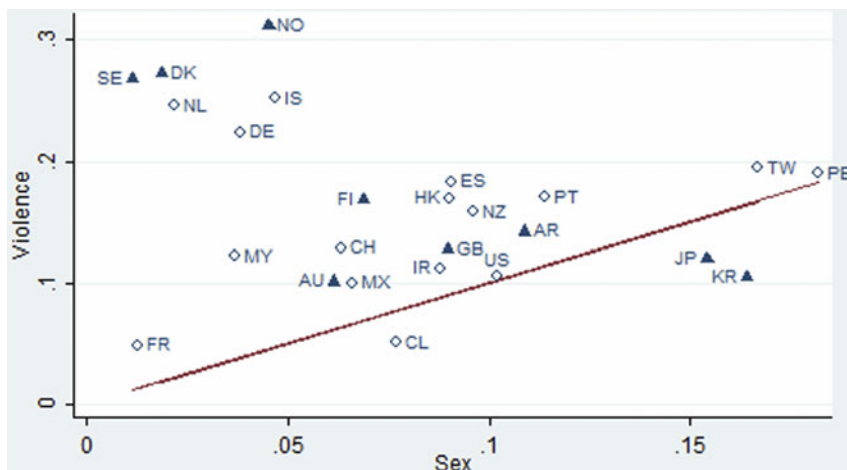


FIGURE 1

Relative weight placed on sex and violence in determining a mature movie rating.

Notes: Each measure for violence and sex is the coefficient from the regression used in Table 2 for each of the countries in our sample. A measure of profanity is only included in the regression for the five English-speaking countries. See Table 1 for interpretation of country abbreviations. Countries with triangles have age cut-offs age 15 or lower and those with circles have age cut-offs 16 or higher

In Figure 1, we mark the nine countries with an age cut-off of fifteen with triangles and the other countries with a circle. If countries with young age cut-offs applied more strict standards when assigning movie rates, we would expect the countries with young age cut-offs to have large coefficients on our measures of sex and violence. Instead we find that within each cluster of countries, there is a pretty even split of countries with younger and older age cut-offs, suggesting that the differences in the weights countries place on sex and violence is not determined mostly by the age group the ratings are designed to protect.

Discussion

In this paper, we estimated the weight that countries place on different types of content in movies (sex, violence, gore, and profanity) when deciding which movies will receive a mature rating. We found an interesting pattern in the way in which ratings are determined in the USA compared to other countries. We find that the US places an enormous amount of weight on profanity and sex, but less weight on violence than the majority of other countries—despite the large body of research showing the negative effects of viewing violence—when determining which movies should receive a mature rating. Indeed, despite a paucity of evidence that offensive language results in harm to youth, Joan Graves, the head of the MPAA ratings board, claims to have parental survey data showing “that, overwhelmingly, parents said they wanted to know what kind of language there was in the film. We asked specifically about the F-word, which clearly bothers a large number of people” (Studiobriefing.net, 2012, March 7). It is no doubt correct that parents want to know what is in each film (see corresponding data in Gentile et al.,

2011, for example). Nonetheless, wanting information is entirely different from setting restrictions based on actual harm (Kunkel et al., 2001; Wilson et al., 1990).

When we look at other countries in the world, it is clear that cultural differences influence what is considered to be mature in content. There is a cluster of Asian countries that put a large amount of weight on sex, whereas Scandinavian countries put large amounts of weight on violence, but almost no weight on sex. Although the past president of the Motion Picture Association of America argued that it was inevitable (and maybe even valuable) for ratings to change as society became more accepting of certain content, these data demonstrate that is not inevitable (Fleming, 2000). Australia and New Zealand demonstrated no ratings creep, and Ireland actually showed rating intensification over the period measured in this study. Ratings therefore do not need to be subjective and variable, but could be designed on principles of scientific reliability and validity (Gentile, Humphrey, & Walsh, 2005).

The variability in the types of content that predict mature ratings is one indicator that there is no universal consensus about what types of material is appropriate for children. A recent national study in the USA also found that parents never agree on what age different types of content are appropriate for children (Gentile et al., 2011). Taken together, these findings suggest that age-based ratings are much less useful than parents deserve. One way rating systems could be improved to be more valuable for the families they are supposed to serve is by providing detailed content information that allows each individual family to decide what is appropriate for their children.

A natural limitation of this study is that all of the measures we used are created by US-based organizations. As such the levels of each content measure may be biased toward an American perspective on cultural mores. Ideally, we would construct content measures based on an aggregation of observations that transcend specific cultural norms. To our knowledge, though, the other countries in our study do not have web sites comparable to the many content review sites in the USA. The absence of such websites may be a reflection of the value placed in each country on understanding content before allowing a child to watch a movie. It may also be a reflection on the trust parents in those countries place on their respective rating boards.

Conclusion

American parents report low trust in the existing rating systems, with only 18% of parents reporting that they feel they get all of the information they need from the movie ratings and only 6% feel that the movie ratings are always accurate (Gentile et al., 2011). This lack of trust seems justified, given that the movie rating system in the USA places so little weight on violent content. This is particularly worrisome, given the evidence that violent content can increase children's aggressive thoughts, feelings, and actions (Anderson & Bushman, 2001; American Academy of Pediatrics, 2009; Paik & Comstock, 1994).

It is perhaps not surprising that cultures vary in what types of content they find offensive or constitutes "mature" content. Nonetheless, if ratings were truly based on objective measures of the presence of content that is scientifically documented to be potentially harmful, then the differences in ratings received by the same movie across countries should be much smaller than we observe today. This is further evidence of the subjectivity of media ratings, and suggests that improvements should be made not only in the USA, but among many countries.

REFERENCES

- American Academy of Pediatrics. (2009). Policy statement—Media violence. *Pediatrics*, *124*, 1495–1503.
- Anderson, Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., . . . , Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, *136*, 151–173.
- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, *12*, 353–359.
- Berkowitz, L., & Rawlings, E. (1963). Effects of film violence on inhibitions against subsequent aggression. *The Journal of Abnormal and Social Psychology*, *66*, 405–412.
- Brown, J. D. (2009). Media and sexuality. In R. Nabi & M. B. Oliver (Eds.), *The Sage Handbook of Media Processes and Effects* (pp. 409–422). Thousand Oaks, CA: Sage.
- Brown, J. D., L'Engle, K. L., Pardun, C. J., Guo, G., Kenneavy, K., & Jackson, C. (2006). Sexy media matter: Exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior. *Pediatrics*, *117*, 1018–1027.
- Bushman, B. J., & Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics & Adolescent Medicine*, *160*, 348.
- Comstock, G., & Scharrer, E. (2003). Meta-analyzing the controversy over television violence and aggression. *Media Violence and Children*, 205–226.
- Coyne, S. M., Stockdale, L. A., Nelson, D. A., & Fraser, A. (2011). Profanity in media associated with attitudes and behavior regarding profanity use and aggression. *Pediatrics*, *128*, 867–872.
- Cressman, D. L., Callister, M., Robinson, T., & Near, C. (2009). Swearing in the cinema: An analysis of profanity in US teen-oriented movies, 1980–2006. *Journal of Children and Media*, *3*, 117–135.
- Fleming, C. (2000, November). The rules of the ratings game. *Premiere*, 35–38.
- Friedrich, L. K., & Stein, A. H. (1973). Aggressive and prosocial television programs and the natural behavior of preschool children. *Monographs of the Society for Research in Child Development*, *38*(4), 1–64. Retrieved from <http://www.jstor.org/stable/1165725>
- Friedrich-Cofer, L., & Huston, A. C. (1986). Television violence and aggression: The debate continues. *Psychological Bulletin*, *100*, 364–371.
- Gentile, D. A. (Ed.). (2003). *Media violence and children: A complete guide for parents and professionals* (Vol. 22). Westport, CT: Greenwood Publishing Group.
- Gentile, D. A., Humphrey, J., & Walsh, D. A. (2005). Media ratings for movies, music, video games, and television: A review of the research and recommendations for improvements. *Adolescent Medicine Clinics*, *16*, 427–446.
- Gentile, D. A., Maier, J. A., Hasson, M. R., & Lopez de Bonetti, B. (2011). Parents' evaluation of media ratings a decade after the television ratings were introduced. *Pediatrics*, *128*, 36–44.
- Gentile, D. A., Oberg, C., Sherwood, N. E., Story, M., Walsh, D. A., & Hogan, M. (2004). Well-child visits in the video age: Pediatricians and the American academy of pediatrics' guidelines for children's media use. *Pediatrics*, *114*, 1235–1241.
- Huston, A. C., Wartella, E., & Donnerstein, E. (1998). *Measuring the effects of sexual content in the media: A report to the Kaiser family foundation*. Menlo Park, CA: Henry J. Kaiser Family Foundation.
- Jenkins, L., Webb, T., Browne, N., Affi, A. A., & Kraus, J. (2005). An evaluation of the motion picture association of America's treatment of violence in pg-, pg-13- and r-rated films. *Pediatrics*, *115*, e512–e517.

- Kunkel, D., Farinola, W. J. M., Cope, K. M., Donnerstein, E., Biely, E., Zwarun, L., & Rollin, E. (2001). Assessing the validity of v-chip rating judgments: The labeling of high-risk programs. In B. S. Greenberg, L. A. Rampoldi-Hnilo, & D. Mastro (Eds.), *The alphabet soup of television program ratings* (pp. 51–68). Cresskill, NJ: Hampton Press.
- Leone, R. (2002). Contemplating ratings: An examination of what the MPAA considers “too far for r” and why. *Journal of Communication*, *52*, 938–954.
- Leone, R. (2004). Rated sex: An analysis of the MPAA’s use of the r and NC-17 ratings. *Communication Research Reports*, *21*, 68–74.
- Leone, R., & Barowski, L. (2011). MPAA ratings creep: A longitudinal analysis of the PG-13 rating category in US movies. *Journal of Children and Media*, *5*, 53–68.
- Leyens, J. P., Camino, L., Parke, R. D., & Berkowitz, L. (1975). Effects of movie violence on aggression in a field setting as a function of group dominance and cohesion. *Journal of Personality and Social Psychology*, *32*, 346–360.
- Linder, J. R., & Gentile, D. A. (2009). Is the television rating system valid? Indirect, verbal, and physical aggression in programs viewed by fifth grade girls and associations with behavior. *Journal of Applied Developmental Psychology*, *30*, 286–297.
- Motion Picture Association of America (MPAA). (2012). Resources for parents. Retrieved January 19, 2012, from <http://www.mpa.org/parentsresources>
- Nalkur, P. G., Jamieson, P. E., & Romer, D. (2010). The effectiveness of the motion picture association of America’s rating system in screening explicit violence and sex in top-ranked movies from 1950 to 2006. *Journal of Adolescent Health*, *47*, 440–447.
- Nathanson, A. I., Eveland, W. P. Jr., Park, H. S., & Paul, B. (2002). Perceived media influence and efficacy as predictors of caregivers’ protective behaviors. *Journal of Broadcasting & Electronic Media*, *46*, 385–410.
- Paik, H., & Comstock, G. (1994). The effects of television violence on antisocial behavior: A meta-analysis. *Communication Research*, *21*, 516–546.
- Palsson, C., Price, J., & Shores, J. (2013). Ratings and revenues: Evidence from movie ratings. *Contemporary Economic Policy*, *31*, 13–21.
- Pardun, C. J., L’Engle, K. L., & Brown, J. D. (2005). Linking exposure to outcomes: Early adolescents’ consumption of sexual content in six media. *Mass Communication & Society*, *8*, 75–91.
- Potter, W. J. (1999). *On media violence*. Thousand Oaks, CA: Sage.
- Rideout, V. (2004). *Parents, media, and public policy: A Kaiser Family Foundation survey*. Menlo Park, CA: Henry J. Kaiser Family Foundation.
- Studiobriefing.net. (2012, March 7). MPAA survey: Parents want F-word barred in PG-13 movies. Retrieved April 10, 2013, from <http://www.studiobriefing.net/2012/03/mpaa-survey-parents-want-f-word-barred-in-pg-13-movies/>
- Tharps, L. L. (2000, October 27). Foul plié. *Entertainment Weekly*, p. 24.
- Thompson, K., & Yokota, F. (2004). Violence, sex, and profanity in films: Correlation of movie ratings with content. *Medscape General Medicine*, *6*, 3.
- Tickle, J. J., Beach, M. L., & Dalton, M. A. (2009). Tobacco, alcohol, and other risk behaviors in film: How well do MPAA ratings distinguish content? *Journal of Health Communication*, *14*, 756–767.
- Wallace, A. (1999, September 9). Parents give the MPAA system a great rating. *Los Angeles Times*. Retrieved April 10, 2013, from <http://articles.latimes.com/1999/sep/09/entertainment/ca-8101>
- Wilson, B. J., Linz, D., & Randall, B. (1990). Applying social science research to film ratings: A shift from offensiveness to harmful effects. *Journal of Broadcasting & Electronic Media*, *34*, 443–468.

Wright, P. J., Malamuth, N. M., & Donnerstein, E. (2012). Research on sex in the media: What do we know about effects on children and adolescents. In D. G. Singer & J. L. Singer (Eds.), *Handbook of Children and the Media* (pp. 273–302). Los Angeles, CA: Sage.

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