

RATING ELECTRONIC GAMES

Violence Is in the Eye of the Beholder

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Commercial ratings assist parents in monitoring their children's media experiences. Exposure to media violence may affect attitudes and behavior, and rating systems should accurately reflect the presence of violent content. Validity indicators for commercial rating systems are examined, including consistency with consumer perceptions. Violent electronic games are a contemporary media phenomenon. A comparison of commercial ratings for popular electronic games with consumer perceptions of game content indicates that, for games with obviously nonviolent or very violent content, there is agreement between consumers and the commercial system. However, there is considerable disagreement about notable violent content in games with cartoon-type violence. Recommendations include incorporating consumer perceptions into a comprehensive, content-based, informational rating system for all entertainment media.

To assist parents in monitoring children's media experiences, commercial rating systems have been developed for film, television, music, and electronic games. Violent video and computer (electronic) games are contemporary media phenomena that have achieved endur-

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ing popularity with children and adolescents. Many popular games rely heavily on violent actions, but relatively little is known about the impact of playing violent games. It is particularly important that ratings accurately describe violent content, as media research suggests that exposure to media violence may increase the relative risk of violent behavior in real life. To be of most value, rating systems should also incorporate consumer perceptions of game content. The purpose of the present descriptive study was to determine whether commercial ratings reflect consumer perceptions of violence in popular electronic games.

THE GOAL OF RATING SYSTEMS

Media ratings have been characterized by controversy and confusion about goals since the inception of the movie rating system in 1968. There is a loose consensus that content which is not appropriate for certain segments of the population, specifically children, is present in today's media. There is little consensus, however, about how to limit access to such content. Rating system opponents warn that mandatory systems are a form of censorship, even when the stated goal is informational. Opponents object to what they perceive as dictation of taste, and fear that this will lead to the absolute prohibition of certain content categories. Rating system opponents also object to warnings for protection from what they do not perceive to be a general hazard.

If the ultimate goal of ratings is to provide information that can be used to control access for vulnerable individuals, then it is important to consider both whether control is warranted and whether the goal is usually achieved. Media ratings typically assess content in the areas of sex, crude language, and violence. In the absence of a substantial body of research, it appears that prevailing societal norms provide the rationale for limiting sexual content and crude language. In the case of violence, some controversy remains as to whether exposure to violent content will influence behavior, frighten children, or have no effect (Funk & Buchman, 1996b). Research cited in support of controlling access to violent media is based on either correlational methodology with disputed causal implications, or on short-term laboratory experiments that some believe have questionable generalizability to real-life situations (Strasburger, 1995).

With respect to the impact of ratings, some have proposed that if certain media presentations are perceived as forbidden fruit, there can be a boomerang effect in which the attractiveness of the restricted entity is heightened (Herman & Leyens, 1977; Lee & Chan-Olmsted, 1994). This may be less problematic with younger children if parents manage media choices, but may be an important consideration for teens as parental control of their media experience is likely to be minimal. Recent work suggests that this effect is less likely with content-based ratings than with those based on age guidelines (Cantor, in press). Alternately, ratings may confer the planned tainted fruit effect, making the specific presentation less attractive (Lee & Chan-Olmsted, 1994).

The present discussion will proceed based on the premise that media ratings should not be used to legislate a specific set of moral standards, or to ban specific content. Rating systems are considered to be an informational aid whose underlying goal is to inform the choices of those individuals who decide to take advantage of the information presented.

EVOLUTION OF MEDIA RATINGS

Rating systems are in place for most of the major popular media. The film industry inaugurated its age-based system in the late 1960s, after more than 40 years of a content-based system (Wilson, Linz, & Randall, 1990). Advisory labels for rock music were introduced in the 1980s. Electronic game rating systems debuted in late 1994, in response to concerns about increasingly realistic and extreme violence. The television rating system followed in February 1996, agreeing to future content descriptors in July 1997. Based on the tradition of the film rating system, age-based systems were developed for television and video games. Software manufacturers developed a content-based system for computer games.

FILM INDUSTRY RATINGS

In 1966, Jack Valenti was appointed head of the Motion Picture Association of America (MPAA), a group of film industry professionals. The Classification and Ratings Administration (CARA) was created

in 1968 to provide the public with advance information about the content of films. Films were given age-based designations of G (general audiences), M (mature audiences), R (restricted under 16, need parent or guardian present), and X (no admission if under 17). The M rating was later changed to GP (general audience, but with parental guidance) and then to PG. A PG-13 (recommend parental guidance under age 13) category was added in 1984, and the X designation was changed to NC-17 in 1990.

Appointees to the CARA board are nonindustry individuals who use a reportedly complex yet ambiguous set of guidelines in the rating process. The appeals panel, which reviews disputed decisions, is composed of industry professionals. Like all current media rating systems, obtaining an MPAA rating is voluntary. Attempting to bypass the system and release a film without a rating is unusual, as the members of the National Association of Theater Owners have agreed not to show unrated films.

The movie rating system has succeeded in providing advance knowledge about content to which many agree access should be restricted. Complaints about the system focus on the perceived double standard for sex and violence: The threshold for restrictive ratings based on sexual content is much lower than the threshold for restricting exposure to violence. This appears to be based on the ratings board's perception of contemporary norms, not on scientific research establishing that exposure to sexual content is more harmful than exposure to violent content (Wilson et al., 1990).

Rating systems succeed to the extent that individuals are aware of, understand, and use the ratings, and also to the extent that the guidelines are enforced by vendors. Surveys indicate that parents are aware of and use film ratings to make initial determinations about whether a film is suitable for children (Robertus & Simon, 1970; Wilson et al., 1990). At the theater or video store level, observance of the guidelines is less consistent, with owners being reluctant to accept an enforcement role.

RATINGS IN THE MUSIC INDUSTRY

In 1985, the Parents Music Resource Center (PMRC) was established in response to increasingly extreme language, innuendo, and

what was perceived to be encouragement of violence. Apparently to avoid government regulation, parental advisory labels were subsequently placed on albums to alert parents to potentially objectionable lyrics. This is a voluntary system, and the recording companies determine if the content warrants an advisory label because it is offensive, violent, or sexually explicit. At the state level, legislation is pending in several states to legally restrict access to labeled albums. Although some expressed concern that labels would draw attention to and make such albums more attractive, this effect has not been documented (Christenson, 1992).

ELECTRONIC GAME RATINGS

Home video games first appeared in the United States in the 1970s. Early games were eventually deemed repetitious and the popularity of this leisure activity declined. In the mid-1980s, Nintendo introduced systems with improved graphics, many peripherals and related products, and a heavy emphasis on violence. Other manufacturers took note of this strategy, and the degree of violence and level of realism in electronic games increased steadily (Funk, 1993; Provenzo, 1991). When legislators began to express concern about this trend in late 1993, video game and software manufacturers began to work toward the creation of a rating system. They were motivated by the warning that, otherwise, a government-mandated system would be imposed.

Two rating systems emerged: The video game system was sponsored by the Interactive Digital Software Association, including Nintendo and Sega. The Interactive Digital Software Ratings Board then became the Entertainment Software Ratings Board (ESRB), and developed a set of age-based categories. At the same time, a rating system for computer games was developed by the Software Publishers Association and affiliated groups. They developed content-based guidelines through the Recreational Software Advisory Council (RSAC). Ultimately, some games have been given more than one type of rating, either from an early Sega system or from translation from a video game format to computer software. Although the rating systems have been in effect for more than 2 years, consumer awareness of the ratings remains low (Fallas, 1996).

The ESRB initially proposed four rating categories: Universal (appropriate for all ages), Teen (13 and older), Mature (17 and older), and Adults Only. The board then responded to the concerns of professionals, including the first author, that the categories were too broad at the lower age levels and an Early Childhood (ages 3 and older) category was added. The ESRB also changed the Universal designation to K-A (Kids to Adult, suitable for 6 and older) and added content descriptors that give a general indication of the level of violence, sexual themes, and crude language. However, deciphering descriptors may be difficult without prior knowledge of the definition. ESRB ratings are made by professionals who are expected to be impartial, even though the ESRB is financially supported by the video game industry.

In the RSAC system, game makers rate their own products using a questionnaire about content in the traditional areas of violence, sex, and language. Using predetermined definitions, each of the three areas receives a score from 0 to 4. Descriptors may also be provided. A review of the definitions suggests that proportionately higher (more extreme) ratings are given for sexual content than are given for violent content. For example, in a recent version of the category descriptions, both "clothed sexual touching" and "humans killed; humans injured; rewards injuring nonthreatening creatures" earn sex category ratings of 2 (Roberts, 1997). The RSAC has also been active in the newest media arena, the Internet. Through the RSAC on the Internet (RSACi), a Web-based system of content ratings for Internet games has been developed.

THE INTERNET

A full discussion of the issues relevant to Internet ratings is beyond the scope of this article. Briefly, there has been significant concern about how to ensure that children are not exposed to inappropriate sexual communications or content while browsing the Web. In August 1995, a Senate hearing addressed the issue of pornography on the Internet and a self-regulatory system was encouraged. Concern persisted, and in 1996, the Communications Decency Act (CDA) was passed as part of the Telecommunications Reform Act. The CDA was designed to criminalize the transmission of obscene or indecent mes-

sages over the Internet to anyone under 18 years of age. Viewing the act as too vague and too broad, the U.S. Supreme Court overturned it in June 1997. However, additional, more focused legislation was already in preparation as the decision was announced. Many self-regulatory efforts are ongoing throughout the Internet industry. For example, commercial programs such as NetSnitch maintain a record of which sites have been visited. Parents can completely block access to specific sites via various filtering technologies that use predetermined key words.

The development of the Platform for Internet Content Selection (PICS), a computer language that enables rating systems to be deciphered by browsers, Web masters, and search engines, has enabled the RSAC rating system to be adapted for the Internet as RSACi. The RSACi is a self-rating, content-based system that assesses violence, nudity/sexual content, and language. Web sites can be rated with one comprehensive content rating, by separate branches, or by individual pages. A voluntary system, the use of RSACi designations is governed by contracts, spot checks, and audits (Balkam, 1997). This is a free service to providers and consumers, financed by corporate sponsors and licensees. The RSAC has teamed up with Microsoft to build the RSACi into the Microsoft browser, Internet Explorer. The implementation of RSACi has also been supported by other major companies, including Apple and Netscape. Site-rating services began in April 1997, and since then over 100 sites per day have been rated (Balkam, 1997).

TELEVISION PROGRAM RATINGS

Television ratings are so new that there will probably be additional important developments before this document is available to readers. In February 1996, television industry leaders agreed to devise a rating system in response to considerable pressure from consumers and legislators. Although sex, language, and violence are each considered, the television rating system was specifically designed to be used in conjunction with the v-chip, slated to be available on 1998 model televisions. The v-chip will enable parents to block access to programs with specified levels of violent content.

MPAA president, Jack Valenti, headed the commission that developed the age-based television rating system. Six categories were established. The first two are specifically for children's programs: TV-Y (acceptable for all ages) and TV-7 (some violence or other content that may not be suitable for children under 7). The remaining four categories are TV-G (general audiences), TV-PG (parental guidance suggested), TV-14 (not suitable for children under 14), and TV-M (for mature audiences only).

However, parent groups, media experts, and child advocacy groups such as the National Parent-Teacher Association (PTA), the National Education Association, and the American Psychological Association persisted in supporting a content-based system for television ratings (Cantor, in press; Cantor, Stutman, & Duran, 1997). Proponents of a content-based system believe that differences in backgrounds, individual characteristics such as developmental as opposed to chronological age, and family standards are not addressed in an age-based system. The age-based system's categories are considered to be overly broad, as they encompass significantly different developmental levels. Content proponents also note that the age-based system cannot allow for developmental variability.

The television industry responded to concerns about the age-based system in July 1997, when the addition of content descriptors to the age-based television advisories was announced. Content descriptors include S (sexual content), V (violence), L (language), and D (dialogue with sexual innuendo). FV (fantasy violence) designates cartoon-type violence in children's programming. In return for the addition of content descriptors, legislators agreed to allow a period of several years to assess the altered television ratings system.

PRIORITIES IN MEDIA RATINGS

The preceding review suggests that the primary inclination of the media is to respond to concern about extreme content by providing broad, age-based guidelines. Industry raters translate their perceptions of the content of a specific medium into a predetermined formula for appropriateness by age. Therefore, it is critical that the perceptions of content are consistent across industry raters and consumers.

SEXUAL CONTENT

As noted previously, media ratings have been more sensitive to sexual content than to violent content. In most cases, explicit sex earns more restrictive ratings than extreme violence, which implies that exposure to explicit sex in media presentations is more harmful than exposure to extreme violence. However, data supporting this standard are difficult to find. Research on the influence of explicit sexual portrayals on sexual behavior in children and adolescents has been limited by the lingering taboos about asking children about these topics (Strasburger, 1995). The limited information available suggests that sexual portrayals in the media have limited independent impact in terms of prompting sexual behavior in adolescents (Strasburger, 1995; Wilson et al., 1990). However, when sex is combined with violence, the effects may be different.

In particular, the potential influence of violent pornography (defined as depictions of women victims enjoying sexual assault or rape) and sexualized violence (defined as less sexually explicit depictions, but with more violence such as torture) have raised concern (Wilson et al., 1990). Sexualized violence is prevalent in many of today's films and television programs. Research with adults suggests that exposure to media that combine sex and violence can produce antisocial attitudes such as a lack of empathy toward female victims of rape (Paik & Comstock, 1994; Wilson et al., 1990).

VIOLENCE

In some American communities, the level of real life violence is comparable to that found in war zones in other countries (Garbarino & Kostelny, 1997; Osofsky, Wewers, Hann, & Fick, 1993). However, many Americans have come to accept real life violence as an unpleasant fact of life, and media violence is often considered entertaining. There is concern about the fact that American youth have become increasingly involved in extremely violent crime, both as victims and as offenders (Becker, Barham, Eron, & Chen, 1994; Murray, Guerra, & Williams, 1997). There have been especially alarming increases in the lethality of violent actions, with serious injury and death becoming much more common than in the past (Murray et al., 1997).

Despite many years of study, there is still controversy over whether media violence has an independent negative impact on attitudes and behavior (Cumberbatch, 1994; Murray, 1997; Paik & Comstock, 1994; Sherrow, 1996). Skeptics argue that everyone is exposed to media violence, and most people are not overly violent. However, there is a considerable body of research demonstrating that, under certain conditions, the direct observation of aggression can contribute to violent behavior (Bandura, Ross, & Ross, 1961; Donnerstein, Slaby, & Eron, 1994; Renfrew, 1997). Research also suggests that the symbolic modeling of violence in the media may affect cognitive development through the formation of enduring cognitive scripts that mediate subsequent behavior (Gerbner, Gross, Morgan, & Signorielli, 1994; Huesmann & Miller, 1994).

A relative risk model suggests that a ubiquitous phenomenon such as media violence is most likely to affect the behavior of individuals who are already at risk for violent behavior (Kandel-Englander, 1994). The mechanism of impact may include learning and imitation, a triggering of preexisting tendencies, or desensitization to actual violence (Huesmann & Miller, 1994; Strasburger, 1995). Developmental differences in cognitive status, capabilities, and processing skills increase younger children's susceptibility to influence.

DEVELOPMENTAL DIFFERENCES

Within the years prior to adolescence, changes in cognitive functioning alter a child's ability to understand and interpret situations presented in the media. Before about age eight, children are most likely to interpret situations based on obvious, surface features; they also may have difficulty differentiating fantasy from reality. Younger children are limited in their ability to integrate information and draw inferences, and to take the perspective of another. Younger children are just beginning the process of internalizing a stable identification and developing moral values.

The context of violence. For children, especially younger children, contextual variables appear to be important in determining the impact of exposure to media violence (Paik & Comstock, 1994; Wilson et al.,

1990). For example, younger children may copy either realistic or unrealistic presentations, whereas older children are more likely to imitate violence that is more realistic (Wilson et al., 1990). When violent actions are either rewarded or not punished, the probability of imitative behavior and pro-violence attitudes increases (Paik & Comstock, 1994). Even when punishment occurs but is temporally separated from the offense, younger children may not grasp the connection (Wilson et al., 1990).

When younger children perceive media characters to be attractive or interesting, then such characters may become role models whose behavior is emulated. Several studies have suggested that justified violence is most likely to be imitated, but heroes who perform aggressive acts are likely to be confusing role models for children (Paik & Comstock, 1994; Wilson et al., 1990). Younger children are more likely to imitate negative characters whose behavior is rewarded, whereas older children are more likely to first make moral judgments about whether a character's behavior is consistent with their developing moral standards.

VIOLENCE IN ELECTRONIC GAMES

Electronic games differ from other media in their interactive, repetitive, reward cycle (Funk & Buchman, 1996b). In most cases, the way to succeed is to identify and select the preprogrammed winning strategies (Provenzo, 1991). In violent games, the winning strategies are violent actions. Players who follow these rules and consistently choose violent maneuvers will experience cycles of positive reinforcement, a potentially powerful learning situation. On a theoretical basis, playing violent electronic games could influence behavior through observational learning, practice, and reinforcement (Funk & Buchman, 1996b). Some individuals may develop and internalize cognitive scripts and abstract rules for social behavior that could generalize outside the game-playing situation. In electronic games, the critical dimension of active participation may increase impact relative to time spent (Chambers & Ascione, 1987; Provenzo, 1991).

**RESEARCH ON THE IMPACT OF
PLAYING VIOLENT ELECTRONIC GAMES**

Research on violent electronic games has relied on adult experimenters' perceptions to describe games in a dichotomous manner: Games either are or are not violent. Results of laboratory research from the 1980s suggest that younger children become more aggressive after laboratory exposure to brief periods, as little as 5 minutes in some cases, of playing violent electronic games (Griffiths, 1991). Other 1980s researchers examined relationships between game playing and patterns of responding on personality measures and behavioral self-reports. No statistically significant relationships were found between either frequency of play or length of game-playing experience, and major adjustment problems such as extreme social withdrawal or increased incidence of conduct disorder. Subgroups of players did report feeling addicted to playing, experiencing temporary increases in family discord, and having increased behavioral problems (Funk & Buchman, 1996a).

In a more recent study of college students, volunteers either played, observed, or were led through the motions required to play a violent virtual reality game (Calvert & Tan, 1994). Those who played the game had increased physiological responses and aggressive thoughts compared to observers and simulation participants. Scott (1995) studied undergraduates who played electronic games with varying levels of violence. After playing the moderately aggressive game, decreased feelings of aggressiveness were reported. Playing a highly aggressive game resulted in an increase in aggressive affect. Scott (1995) emphasized the importance of considering individual differences in response to playing aggressive games.

To incorporate consumer perceptions of game content into research on playing impact, the first author developed a category system with the assistance of children and adolescents (Funk, 1993). In 1992, a list of 211 favorite games was generated by 434 seventh and eighth grade students in a mid-sized midwestern city. A set of five categories describing the central content of each game was developed by the first author with the assistance of a college student and a panel of children ages 8 to 17. Twelve children participated formally, but they were per-

TABLE 1
Revised Electronic Game Categories With Descriptions

<i>Category</i>	<i>Description</i>
General Entertainment (GE)	The main action is a story or game with no fighting or destruction.
Educational (ED)	The main action involves learning new information or figuring out new ways to use information.
Fantasy Violence (FV)	The main action is a story where a cartoon character must fight or destroy things and avoid being killed or destroyed while trying to reach a goal, rescue someone, or escape from something.
Human Violence (HV)	The main action is a story where a human character must fight or destroy things and avoid being killed or destroyed while trying to reach a goal, rescue someone, or escape from something.
Nonviolent Sports (SP)	The main action is sports without fighting or destruction.
Sports Violence (SV)	The main action is sports with fighting or destruction.

SOURCE: Funk and Buchman (1995, p. 93).

mitted to consult with friends. Then, the category descriptions and a categorized list of the 211 games were re-presented to a sample of 38 members of the original group of seventh and eighth graders. These individuals were asked whether the games were accurately categorized. In cases of disagreement, they were asked to suggest an alternate category. The average rate of agreement with the categorizations was 94% (Funk, 1993).

The category system was subsequently revised to incorporate children's perceptions of differences between violent and nonviolent sports (Funk & Buchman, 1995). In the revised version, games are categorized into one of six categories, using the definitions provided (see Table 1).

Over 1,000 fourth through eighth graders and over 200 adults have been asked to categorize current electronic games using this category system. In most cases, even the youngest participants have no difficulty understanding and using the system that has been used to examine links between aspects of self-concept, time commitment, and a preference for violent games. When a significant relationship with self-concept was identified, the relationship was typically negative: Either more time commitment or a higher preference for violent games was associated with lower perceived self-competence in behavior, academic, or social areas (Funk & Buchman, 1996a, 1996b).

THE PRESENT STUDY

Many questions about the impact of playing violent electronic games remain unanswered. Initial data suggest that, for some children, exposure to violent games may increase the relative risk of negative attitudes and behavior (Funk, Germann, & Buchman, 1997). However, questionnaire responses from our ongoing research suggest that most parents have only minimal knowledge of the content of popular electronic games. Our data also indicate that parents are unlikely to arrange planned supervision of children's electronic game playing (Funk, Flores, & Buchman, 1997; Funk, Welton, Flores, & Buchman, 1997).

It is unrealistic to expect that parents will personally view the full spectrum of content throughout a game. Many games take more than 100 hours to play to the end, where the content may be dramatically different than at the beginning. An accurate informational rating system should provide parents with the information needed to monitor game content. However, for rating systems to be a valid and effective informational aid, it is critical that the translation of content into categories reflect the content perceptions of the consumers. The present descriptive study examined whether the commercial electronic game rating systems reflect consumer perception of central content themes, specifically violent themes. Commercial ratings were compared with game categorizations done by child and adult consumers using the system of categories developed by the authors and described above.

METHODS

As part of a larger study conducted in 1995 shortly after electronic game ratings debuted, 201 fourth graders were asked to list up to three favorite video or computer games and then categorize these games using the descriptions provided (see Table 1). Children's reports of maternal education ranged from eighth grade or less through graduate school, with about one fourth of the children reporting maternal education to be in the range of high school to college degree, and half of the children responding "don't know." In 1996, the list of games generated by the fourth graders was categorized by 145 college students

TABLE 2
Commercial Ratings for Electronic Games

<i>Category</i>	<i>Description</i>
Early Childhood (EC)	Titles rated EC are suitable for children ages three and older and do not contain any material that parents would find inappropriate.
Kids to Adult (K-A)	Titles rated K-A are suitable for persons ages six and older. These titles will appeal to people of many ages and tastes. They may contain minimal violence, some comic mischief (e.g., slapstick comedy), or some crude language.
General Audiences (GA)	This designation indicates the content is suitable for all ages.
Teen (T)	Titles rated T are suitable for persons ages 13 and older. Titles in this category may contain violent content, mild or strong language, and/or suggestive themes.
Mature (M)	Titles rated M are suitable for persons ages 17 and older, and were previously rated as M13 and MA13 (13 and older) and MA17 (17 and older). These products may include more intense violence or language than products in the T category. In addition, these titles may also include mature sexual themes.
Adults Only (AO)	Titles rated AO are suitable only for adults. These products may include graphic depictions of sex and/or violence. AO products are not intended to be sold or rented to persons under the age of 18.

SOURCE: Adapted in part from *How to Use the New Entertainment Software Rating System* (Entertainment Software Rating Board, n.d.).

in two introductory university Developmental Psychology classes. Nine of the college students identified themselves as parents. In early 1997, adult parents attending a regular parent group meeting at a Catholic elementary school, and 52 sixth graders from the same school system as the fourth graders, also categorized the same list of games. All participants were from a mid-sized, Midwestern city, and in general terms, the socioeconomic status of both the child and adult participants can be characterized as primarily lower middle to middle class.

All participants were asked to categorize each of the 49 listed games that they had played or had observed someone play. The ratings for baseball, basketball, and football games were combined into a Team Sports group. Ratings for games in the same series (Mario Brothers, Mortal Kombat, Sonic) were also grouped together. Then, commercial ratings were identified for the 10 games most frequently recognized by participants. By investigating sources available to consumers, commercial ratings were found for 8 of the top 10 games or

TABLE 3
Mean Number of Games Rated by Group, by Gender^a

	<i>Number of Raters</i>	<i>Mean Number Rated^b</i>
Sixth graders ^c	52	13 ^d
Female	38	11
Male	14	19
Parents	37	9
Female	31	7
Male	5	18
Nonparents	146	16
Female	93	14
Male	53	20

a. Fourth graders not included because they generated the list of favorite games.

b. Mean number of games rated by each rater.

c. Not all participants stated gender.

d. Maximum is 49.

game groupings at the time the data were collected (see Table 2). When multiple commercial ratings were found for the same game or game grouping, all of the ratings are specified. Perception of game content was compared for each of the 10 games across all groups of raters and the commercial rating system.

RESULTS

The mean number of games rated is listed in Table 3 by respondent group. On average, nonparents, all of whom were college students, categorized the most games. Across the entire sample, males categorized more of the games than females. Sixth-grade males categorized the second highest number of games. Female parents categorized the fewest games.

CONSISTENCIES IN CATEGORY ASSIGNMENT

Agreement about categorizations varied. In general, there was stronger agreement among study raters than between study raters and the commercial system. As might be expected, consistencies were found for games at the extreme ends of the violence spectrum: those with very limited violence and those with extreme levels of violence.

TABLE 4
Ratings Comparisons for Doom Games^a

	<i>Total Ratings</i>	<i>General</i>		<i>Sports</i>	<i>Sports Violence</i>	<i>Human Violence</i>	<i>Fantasy Violence</i>
		<i>Entertainment (%)</i>	<i>Educational (%)</i>				
Children							
Fourth graders	1 ^b	0	0	0	0	100	0
Sixth graders	10	0	10	0	0	60	30
Adults							
Parents	6	0	0	0	0	67	33
Nonparents	45	2	0	0	4	78	16

NOTE: Commercial rating is Mature (M).

a. All percentages are rounded up.

b. For fourth graders, indicates number who listed it as favorite game.

TABLE 5
Ratings Comparisons for Mortal Kombat Games^a

	<i>Total Ratings</i>	<i>General</i>		<i>Sports</i>	<i>Sports Violence</i>	<i>Human Violence</i>	<i>Fantasy Violence</i>
		<i>Entertainment (%)</i>	<i>Educational (%)</i>				
Children							
Fourth graders	14 ^b	7	0	50	21	7	14
Sixth graders	57	2	0	12	32	28	26
Adults							
Parents	30	10	0	0	10	77	3
Nonparents	290	0	0	1	6	76	17

NOTE: Commercial ratings are Mature: suitable for persons 13 and older (MA13) and 17 and older (MA17).

a. All percentages are rounded up.

b. For fourth graders, indicates number who listed it as favorite game.

For example, most raters agreed that Carmen Sandiego belonged in a nonviolent category (Educational or General Entertainment). No commercial rating was found for this game at the time the data were collected.

For two games that are well-known for violent content (Doom and Mortal Kombat), there was also strong agreement about the central role of violent content (see Tables 4 and 5). Children, parents, and nonparents most often placed these games in one of the violence categories, most commonly Human Violence. Half of the fourth graders

TABLE 6
Ratings Comparisons for Street Fighter Games^a

	<i>Total Ratings</i>	<i>General</i>			<i>Sports</i>	<i>Human</i>	<i>Fantasy</i>
		<i>Entertainment (%)</i>	<i>Educational (%)</i>	<i>Sports (%)</i>	<i>Violence (%)</i>	<i>Violence (%)</i>	<i>Violence (%)</i>
Sixth grade	57	2	4	2	21	35	37
Males	22	5	5	5	0	46	41
Females	35	0	3	0	34	29	34
Adults	234	0	0	3	8	77	12
Parents	32	0	0	13	9	75	3
Males	11	0	0	36	0	64	0
Females	21	0	0	0	14	81	5
Nonparents	202	0	0	2	7	77	13
Males	109	0	0	0	4	72	25
Females	93	0	0	4	12	84	0

NOTE: Commercial ratings are Kids to Adult (K-A), Teen (T), and Mature, suitable for persons 13 and older (M13).

a. All percentages are rounded up.

listing *Mortal Kombat* as a favorite game placed it in the Sports category. Commercial ratings recognize that the content of these games may not be suitable for younger consumers (M, MA13, MA17).

Approximately 93% of sixth graders, 97% of nonparents, and 87% of parents rated *Street Fighter* games in one of the violence categories (see Table 6). Adults were most likely to categorize this game as Human Violence, whereas children's ratings were split among the three violence categories. Female adults were somewhat more likely than male adults to rate this game in the Human Violence category. Commercial ratings ranged from K-A (6 years old through adult) to Teen (13 and older) to Mature (17 and older).

Team Sports games (football, baseball, and basketball) were most often categorized into the Sports category, with Sports Violence and General Entertainment being the next most frequent choices. Commercial ratings were K-A, GA, or not rated.

VARIATIONS IN CATEGORY ASSIGNMENT

The most striking differences between the commercial system and consumer perceptions were found for games in which cartoon characters typically engage in violent actions (*Aladdin*, *Donkey Kong*,

Mario Brothers, Pacman, Sonic). Although the commercial system does not recommend restrictions for these games, a large percentage of study respondents placed them in one of the violence categories. Children appear to be more likely than adults to place these games into one of the violence categories. Nonparents categorized these games into one of the violence categories more often than parents.

Ratings for Sonic and Pacman, well-known games with cartoon-type violence, demonstrate these variations among raters. For Sonic, ratings by the adults were split between General Entertainment and Fantasy Violence. All five of the fourth graders listing Sonic as a favorite game categorized it into one of the violence categories. Sixth graders split their ratings between General Entertainment and Fantasy Violence. Adults categorized Pacman primarily as General Entertainment and Fantasy Violence. Ratings for Pacman were variable among fourth graders, with Sports and Sports Violence being the most common ratings. For sixth graders, half rated Pacman as Fantasy Violence, and one quarter as Educational. Rating comparisons for Sonic and Pacman across age groups are shown in Tables 7 and 8.

Across all games containing significant cartoon-style violence, nonparents were somewhat more likely than parents to categorize into one of the violence categories. For example, Donkey Kong was placed in one of the violence categories by 43% of parents, and by 54% of nonparents. Mario Brothers games were placed into one of the violence categories in 64% of nonparent ratings, whereas 41% of parent ratings placed these games into a violence category (see Table 9).

A majority of sixth graders viewed both Donkey Kong and Mario Brothers games as being most appropriately placed in a violence category (see Table 10). In 37% of the ratings, female sixth graders rated Mario Brothers games as educational. The commercial rating for both Donkey Kong and Mario Brothers games do not recommend any player restrictions.

Aladdin was rated GA by the commercial system, but about half of the consumers placed this game in one of the violence categories (see Table 11). The two male parents rating this game were the exception: One rated it as General Entertainment, the other as Educational. The ratings of female parents and nonparents were similar to each other, and were split evenly between Fantasy or Human Violence and General Entertainment. Male nonparents were split fairly evenly between

TABLE 7
Ratings Comparisons for Sonic Games^a

	<i>Total Ratings</i>	<i>General</i>		<i>Sports</i>	<i>Sports Violence</i>	<i>Human Violence</i>	<i>Fantasy Violence</i>
		<i>Entertainment (%)</i>	<i>Educational (%)</i>				
Children							
Fourth graders	5 ^b	0	0	0	40	0	60
Sixth graders	66	32	5	0	8	5	52
Adults							
Parents	19	79	0	0	0	0	21
Nonparents	169	47	2	2	0	2	48

NOTE: Commercial rating is General Audiences (GA).

a. All percentages are rounded up.

b. For fourth graders, indicates number who listed it as favorite game.

TABLE 8
Ratings Comparisons for Pacman Game^a

	<i>Total Ratings</i>	<i>General</i>		<i>Sports</i>	<i>Sports Violence</i>	<i>Human Violence</i>	<i>Fantasy Violence</i>
		<i>Entertainment (%)</i>	<i>Educational (%)</i>				
Children							
Fourth graders	14 ^b	7	0	50	21	7	14
Sixth graders	16	6	25	0	6	13	50
Adults							
Parents	12	83	0	0	0	0	17
Nonparents	82	60	2	0	0	1	37

NOTE: Commercial rating is Not Rated.

a. All percentages are rounded up.

b. For fourth graders, indicates number who listed it as favorite game.

General Entertainment and Fantasy Violence. Human Violence was the most common category for male sixth graders (60%). The most common rating given by sixth-grade females was Fantasy Violence (53%).

In summary, present results indicate that there is agreement between consumer perceptions of game content and the commercial rating system about the presence of notable violent content for games that are most obviously nonviolent or violent. However, there is considerable disagreement between consumers and the commercial rating system about the presence of notable violent content in games with cartoon-type violence.

TABLE 9
Comparison of Ratings by Parents and
Nonparents on Donkey Kong and Mario Brothers Games^a

	<i>General</i>			<i>Sports</i>	<i>Human</i>	<i>Fantasy</i>	
	<i>Total</i> <i>Ratings</i>	<i>Entertainment</i> <i>(%)</i>	<i>Educational</i> <i>(%)</i>	<i>Sports</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>
Donkey Kong							
Parents	21	57	0	0	0	0	43
Nonparents	141	45	0	1	0	4	50
Mario Brothers							
Parents	41	59	0	0	0	7	34
Nonparents	334	33	2	2	0	6	58

NOTE: Commercial ratings are Kids to Adult (K-A) and Not Rated.

a. All percentages are rounded up.

TABLE 10
Sixth Grade Ratings Comparison by Gender for
Donkey Kong and Mario Brothers Games^a

	<i>General</i>			<i>Sports</i>	<i>Human</i>	<i>Fantasy</i>	
	<i>Total</i> <i>Ratings</i>	<i>Entertainment</i> <i>(%)</i>	<i>Educational</i> <i>(%)</i>	<i>Sports</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>	<i>Violence</i> <i>(%)</i>
Donkey Kong							
Females	24	0	8	4	17	8	63
Males	13	23	0	0	0	23	54
Mario Brothers							
Females	46	7	37	9	0	2	46
Males	26	31	4	0	4	31	31

NOTE: Commercial ratings are Kids to Adult (K-A) and Not Rated.

a. All percentages are rounded up.

DISCUSSION

In the present study, content perceptions of consumers were compared with commercial electronic game ratings. There was agreement about games where violent content was not perceived to be a central feature, or when the perception of central content was that human figures were involved in violent actions. However, the commercial rating system did not consistently reflect the perceptions of children and adults for games with primarily cartoon-type or fantasy violence. Within the consumer groups, ratings varied by age, gender, and status as parent or nonparent.

TABLE 11
Comparison of Ratings for Aladdin Game^a

	<i>General</i>			<i>Sports</i>	<i>Human</i>	<i>Fantasy</i>	
	<i>Total Ratings</i>	<i>Entertainment (%)</i>	<i>Educational (%)</i>	<i>Sports (%)</i>	<i>Violence (%)</i>	<i>Violence (%)</i>	
Sixth grade	22	23	0	5	5	23	46
Males	5	20	0	0	0	60	20
Females	17	24	0	6	6	12	53
Adults	51	47	6	0	2	8	37
Parents	10	50	10	0	0	10	30
Males	2	50	50	0	0	0	0
Females	8	50	0	0	0	13	38
Nonparents	41	46	5	0	2	7	39
Males	17	47	6	0	0	0	47
Females	24	46	4	0	4	13	33

NOTE: Commercial rating is General Audiences (GA).

a. All percentages are rounded up.

THE IMPORTANCE OF FANTASY VIOLENCE

Consumers were consistent in their perceptions that what we have operationally defined as Fantasy Violence was central to the content of many popular cartoon-type electronic games. Despite the high level of agreement among our raters regarding the presence of fantasy violence content, in most cases the commercial ratings were unlikely to recommend restricting access for younger consumers. It appears that the assumption is made that the more realistic human violence is the only type of violence that should be restricted. However, with respect to the impact of electronic games, there are no data to support this assumption. It is appropriate that the ratings reflect the potential negative impact of realistic violence, but realism is only one characteristic that may influence the impact of media violence.

Media violence has many defining characteristics, and several have been linked with negative impact. Behavioral, affective, or attitudinal changes have been associated with type of violence, context of violence, intensity, justification, and trivialization (Mustonen & Pulkkinen, 1997; Sherrow, 1996; Wilson et al., 1990). In the present study, games categorized as Fantasy Violence are defined by their cartoon-type violence. Paik and Comstock's (1994) meta-analysis identified a strong association between exposure to cartoon violence on television and subsequent aggressive or antisocial behavior.

In electronic games, the presence of reward and punishment is a key contextual variable (Chambers & Ascione, 1987; Provenzo, 1991). In most cases, violent actions are rewarded. This may increase the possibility that such actions will be imitated. Intensity or amount of violence is another key factor that has been associated with increased impact; intense violence is often a major selling point in advertisements for electronic games. In other promotional materials for violent games, the player's role as a good guy is emphasized. The first author has called this the "Power Ranger defense" (Funk, 1995). In the Power Ranger defense, violence is presented as a prosocial choice, justified by its association with the moral high ground. However, related media research suggests that when violent actions are perceived to be justified, the association between exposure and subsequent negative behavior is strengthened (Paik & Comstock, 1994; Wilson et al., 1990).

It has been suggested that violence is trivialized by virtue of its presence in electronic games (Provenzo, 1991). In addition, the slapstick quality associated with violent actions in electronic games may further trivialize the violent actions. Related media research suggests that is another characteristic that may increase the probability that the violent acts depicted will be imitated (Mustonen & Pulkkinen, 1997).

The importance of cartoon violence has been acknowledged in the addition of the Fantasy Violence content descriptor for children's television programs. By virtue of several defining characteristics including the type, context, intensity, justification, and trivialization of violence, fantasy violence in electronic games also warrants recognition in rating systems.

DIFFERENCES AMONG PARTICIPANTS

FAMILIARITY WITH POPULAR GAMES

In any given year, thousands of electronic games are available in several modalities, including dedicated systems, hand-held games, computer systems, and cable television. Few parents have the opportunity to play games to the end, where the content may be very different than at the beginning. On average, parents recognized 9 of the 49

games presented in the present study. Female parents, perhaps the most likely supervisors, recognized 7 of the 49 games on average. These data suggest that parents may not have the information needed to help children make appropriate choices. This may be a moot point, as children and parents participating in related studies have stated that supervision of electronic game playing is rare (Funk, Flores, et al., 1997; Funk, Welton, et al., 1997). Even if parents are unlikely to supervise electronic game playing, they may financially control the acquisition of games, particularly for younger children. Parents must be able to readily identify, understand, use, and trust the accuracy of rating systems.

To meet the goal of providing information that may be used to control access for vulnerable individuals, electronic game ratings should provide complete information about content in the key areas of violence, sex, and language. Present results suggest that the age-based rating system falls short of this goal in the rating of games in which consumers perceive cartoon-type or fantasy violence. The content-based system was not represented in our 10 most-recognized games at the time the data were collected.

PARENT STATUS

For some cartoon-type violent games, parents were less likely than nonparents or children to categorize games into one of the violence categories. The reason for this trend cannot be determined from the available data. Perhaps some parents have been desensitized to the violent content of the media that children often choose. Alternately, parents may be reluctant to acknowledge that cartoon-type violence is important because, if their children play such games, this may reflect negatively on them.

GENDER DIFFERENCES

In our sample, males recognized more games than females. This is consistent with past research in which males were found to spend considerably more time playing electronic games than females (Buchman & Funk, 1996). Although there were some game-specific gender differences in content perception, these differences were neither marked

nor consistent. Other research suggests that traditional gender differences in habits and stereotypes about game playing are decreasing (Funk & Buchman, 1996a; Funk, Germann, et al., 1997). This is consistent with changes in other societal stereotypes (Deaux & Kite, 1993).

In our larger sample of approximately 1,000 fourth through eighth graders, girls most often preferred games that they categorized as Fantasy Violence (Buchman & Funk, 1996; Funk, 1993). It has been noted that cartoon-type violence increases the attraction and the social acceptability of aggression for girls (Cantor & Nathanson, 1997; Mustonen & Pulkkinen, 1997). Although traditionally the response of males to media violence has been of most concern, it now appears necessary to seriously study the impact of media violence on females, particularly with respect to cartoon violence (Funk & Buchman, 1996a; Funk, Germann, et al., 1997; Paik & Comstock, 1994; Pepler & Slaby, 1994). The female preference for fantasy violence games provides further justification to ensure that ratings reflect this content.

LIMITATIONS OF THE PRESENT STUDY

Research on electronic games is in an early developmental phase. The present study is an indirect comparison of consumer perceptions of game content and the commercial rating system that has several limitations. A conservative approach was taken to statistical analysis, and only descriptive statistics were calculated. Therefore, some findings may not be significant in the strict statistical sense. The representativeness of the sample is limited to middle-class individuals, which may affect generalization to other groups. The reliability of consumer responses is another possible limitation. Some younger participants did need assistance in understanding how to use the category system and complete the rating task. However, assistance did not appear to affect children's willingness to place games in one of the violence categories. It is also possible that children deliberately placed games into categories that did not reflect their perceptions of game content. For example, one sixth grade girl classified Doom as Educational. However, across several studies, ratings of the same game have been relatively consistent among raters by gender and age group. Major game

classifications, such as violent versus nonviolent, appear quite stable. When present, differences are most likely to occur within major classification groups (e.g., perceptions of *Mortal Kombat* as either Human or Sports Violence).

This study was limited to perceptions of violent content. We did not specifically investigate perceptions of sexual content or language. Rating comparisons were made for a limited number of games, some of which were grouped together. These factors may limit the reliability of the findings. Virtual reality games, a potentially very powerful medium, also were not examined. The list of games generated by the fourth graders did not permit comparison of consumer perceptions with the content-based (RSAC) system. In future research, comparisons of consumer perceptions should be made on a variety of current games using the commercial ratings, as well as an alternate system such as the categories used in the present study.

RECOMMENDATIONS

Controversy about the impact of media violence is persistent. However, given the significant increase in lethal juvenile violence, even the possibility that exposure to violence in electronic games could be harmful for some children is an important consideration. It is imperative that parents have ready access to an accurate informational system that will assist them in making choices about their children's media experiences. The present systems are an important step in this direction, but refinements are needed, particularly with respect to cartoon-type or fantasy violence.

The lines between the various media continue to blur. At the time of this writing, many consumers can access electronic games on the Sega channel via cable television. Web television will bring interactive opportunities into additional homes. As the boundaries between various media blur, the concept of one comprehensive rating system media gains credence. This system would be rooted in research, with a common sense component via consumer input. Violence, sex, and crude language would be measured. Specific violence characteristics would be factored into the ratings provided.

The ideal would be to have one content-based system for most media including film, television, and electronic games. It is inherently more difficult to make rating judgments about music in the absence of visual stimuli, and a complex rating system for this medium may not be feasible. If a comprehensive media rating system were instituted for film, television, and electronic games, consumers would quickly become familiar with the meaning of various categories through frequent exposure. Given that a comprehensive system is unlikely, a common set of descriptors similar to those being added to the television rating system would be the next most useful strategy.

Some parents seek personal knowledge of the content and activities included in electronic games. However, most are unlikely to play an electronic game through all levels. In addition to ratings, therefore, a parent preview should be added at the beginning of each game. This would be a brief, 10 to 15 minute segment incorporating content and activities from all levels. Alternately, a self-contained, inexpensive parent preview module would allow parents to review game content prior to making the larger investment in the full game.

Research in electronic games, and particularly violent electronic games, should continue. Experimenters need to consider and use the content perceptions of participants as they attempt to judge impact. Research with younger children is particularly critical, as this group is at highest risk for being affected by media violence (Donnerstein et al., 1994). Various personal and interpersonal factors such as intellectual ability, peer popularity, family relationships, identification, and tendency to fantasize about aggression (Huesmann & Miller, 1994) may help to alter perceptual, cognitive, and affective reactions. There is a need to identify high-risk children whose game playing must be even more closely monitored to avoid negative impact (Funk & Buchman, 1996b; Funk, Germann, & Buchman, 1997).

Many parents are not even aware that electronic game ratings are available (Fallas, 1996). Professionals should help to educate the public about the rating systems, about related developmental issues, and about the importance of parental supervision of children's media experience. Professionals must also support media literacy efforts to develop future informed consumers.

Finally, the autonomy of professional raters must be protected, and the integrity of self-ratings must be guaranteed. Ratings of future

games would benefit from consumer input: Even though there is not perfect agreement among consumers, professional decisions should be informed by consumer perceptions of game content. Given the preliminary status of knowledge about the impact of playing electronic games, ratings should err on the conservative side and reflect all potentially negative content.

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