

5.1. Violence for the Masses: The Impact of Violence in Entertainment Media

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Abstract

Electronic mass media have become part of people's life almost everywhere around the globe. Media ubiquity implies the permanent availability of 'media windows' to the world that provide information, social contact, and experiences of entertainment and learning. With regard to violence, however, media appearance and media content also bear potential harms for the recipients on cognitive, emotional, physiological, and behavioural levels. The present review of the literature on violent media consumption therefore considers psychological dimensions and behavioural consequences (i.e., antisocial and aggressive behaviour) as well as specific characteristics of different types of media violence (e.g., identification with violent characters through first-person perspective in video games). Theoretical frameworks will be presented that have been suggested to account for the different effects of electronic mass media. Findings result from meta-analyses and studies that include cross-sectional analyses, lab experiments, and longitudinal studies, thus reflecting various approaches to empirical research. Programs that aim at preventing harmful effects of violent media consumptions will conclude the paragraph.

Résumé

Les media de masse électroniques font désormais partie de la vie de tout le monde pratiquement partout autour du globe. L'ubiquité des media implique la disponibilité permanente de "fenêtres médiatiques" sur le monde qui fournit de l'information, des contacts sociaux et des possibilités de loisir et d'apprentissage. En ce qui concerne la violence, cependant, la forme et le contenu que prennent les media peuvent aussi être porteurs de dangers potentiels pour son receveur à des niveaux cognitifs, émotionnels, physiologiques et comportementaux (soient des comportements antisociaux et agressifs). La présente revue de la littérature relative à la consommation de media violents s'attache de ce fait à la dimension psychologique et aux conséquences comportementales (soient les comportements antisociaux et agressifs), ainsi qu'aux caractéristiques spécifiques des différents types de violences des media (par exemple l'identification à des personnages violents par le biais du positionnement en tant que "je" dans les jeux vidéos). Nous

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présenterons un cadre théorique reconnu comme pouvant rendre compte des différents effets des mass media électroniques. Nos conclusions résultent de méta-analyses et de recherches qui incluent des études transversales, des expériences en laboratoire, des études longitudinales, qui reflètent ainsi les différentes approches en recherche empirique. Nous concluons ce paragraphe en traitant des programmes qui visent à prévenir les conséquences dommageables de la consommation de violence médiatique.

5.1.0. Introduction

Electronic media have become an important part of peoples' life almost everywhere around the globe. Television (TV), movies, video games and the Internet currently provide users with a breathtaking bulk of information and entertainment unprecedented in history. However, there have also been numerous discussions about harmful effects of media content. In this regard, the present chapter focuses on media violence, an intensely debated issue in society. Following an introduction to the ubiquity of violence in the media (section 1), specific characteristics of electronic media will be analysed (section 2). Then, theoretical frameworks will be presented that account for the relationship between violent media and their impact on recipients (section 3). Next, major findings from media effects research will be described (section 4), followed by an overview of current approaches aimed at preventing harmful effects of violent media consumption (section 5). The overview ends with some concluding remarks.

5.1.1. Media ubiquity—ubiquity of violence in the media

Across media, TV currently ranks number one in the United States in reaching over 18 year-olds per day (89.5%), followed by the Internet (67.5%), and radio (60.6%; Television Bureau of Advertising [TVB], 2010). Since 1985, TV ownership in the United States has been as high as 98% (Bushman & Huesmann, 2001). However, other electronic media are also popular: 78% of U.S. households have access to the Internet and at least 32% own a video game system (TVB, 2010). These numbers demonstrate the ubiquity of media, a phenomenon that implies an almost permanent availability of windows providing media-filtered views of the world that add to children and adolescents' socialization experienced with families and peers (Wilson, 2008). Media ubiquity also affects the way people spend their free time. Children in the U.S. spend more time watching TV and movies, playing video games, and surfing the Internet than they spend in school each year (Dill, 2009).

Along with the sheer amount of media available, media content may be problematic. TV, for example, has long been known to be an acronym for 'too violent', indicating that violent content is seen as a hallmark of this medium (cf. Bushman & Huesmann, 2001). The portrayal of violence on TV is multifaceted. It includes anthropomorphized cartoon characters like *Tom and Jerry* that chase and hit another (Wilson, 2008), as well as their wicked descendants *Itchy and Scratchy* in the successful cartoon series *The Simpsons*. With *Itchy and Scratchy*, the fight between a cat and a mouse is brought to a satirical yet utterly overblown level of blood and gore. With regard to realistic portrayals of violence, popular TV crime series like the diverse *CSI* spinoffs provide in-depth presentations of injuries, mutilations, and dismemberments shown in close-ups. Violent content is not confined to fictional programs though. Rather, negative content in non-fictional TV news reports like violence, accidents and crime has become more prevalent across the last three decades (Smith, et al.,

2008). In her overview, Wilson (2008) states that at least six out of ten programs feature forms of physical aggression in the plot. A young person will witness roughly six different violent exchanges in a typical hour of watching TV (p.240).

Furthermore, violent motion pictures are no longer confined to TV sets or movie theatres. In 2009, already 17.6 million mobile subscribers were watching video on their mobile phone in the U.S., an increase of 63.7% compared to 2008 (TVB, 2010). And violence is a common theme in other media as well (Wilson, 2008): it was found even more pervasive in video games (68%) than on television (60%); it is quite commonly found in movies (90%), but rarely in music videos (15%). However, certain genres within each medium are more typically aggressive in nature. This is especially true for children's cartoons, animated movies, rap/hip hop music, and Teen- and Mature-rated video games (Wilson, 2008). In their analysis of top-selling video games, Smith et al. (2003) found that about 9 out of 10 Teen- and Mature-rated games contained violence (compared to 6 out of 10 games rated 'Everyone'). Likewise, violent interactions were far more frequent in Teen- and Mature-rated games (4.6 per minute) than in Everyone-rated video games (1.2 per minute).

5.1.2. Media portrayals of violent and aggressive behaviour

In this section, we look at the way violence and aggressive behaviour is portrayed in the media. Aggression is typically defined as any behaviour that is intended to harm another person who is motivated to avoid the harm (Baron & Richardson, 1994). This definition implies that various forms of behavioural patterns may be characterised as aggression. Violence, for example, denotes the physical aspect that occurs in the form of e.g. hitting, pushing, or kicking a person. On the basis of this definition the first subsection (2.1) refers to general major differences between real-life aggression and its mediated versions. Violence in the media will then be analysed according to specific media characteristics (2.2).

5.1.2.1 General differences between violence in reality and media-based violence

Mass media do not provide one-to-one reflections of real-life aggression. Mediated versions rather contain distorted interpretations of real-life aggression that have been adapted or redesigned in a way to serve specific purposes. Typically, crime depictions on TV differ from official crime statistics. For example, so-called white-collar or corporate crimes are vastly underrepresented on TV. In contrast, street crimes are vastly overrepresented, including depictions of violent crimes like murder (Haney & Manzollati, 1980 cited in Dill, 2009). This leads to distorted representations of the frequency of occurrence of different forms of crimes in the recipients — in terms of cognitive availability TV viewers are far more likely to associate 'crime' with street crimes than other forms of crime. Likewise, crime on TV is typically related to

pathological levels of greed or other forms of mental problems of the perpetrator. Individual motivations that are based on more realistic circumstances, like anger and frustration or financial problems due to unemployment or drug addiction, are far less frequent on TV (cf. Dill, 2009).

Research on media violence has largely focused on the graphic nature of physical violence in TV programs and video games. Recently, however, another form of aggression — relational aggression — was found to be highly prominent in reality TV shows, like voyeuristic documentaries (e.g., *Big Brother*) or talent competitions (e.g., *American Idol*; Coyne, et al., 2010). Relational aggression characterises behaviour aimed at harming relationships or the social environment by gossiping, spreading rumours, social exclusion, and relational manipulation. Compared to real life, reality TV also portrays females as more relationally aggressive than they actually are. Supporting the 'mean girl' stereotype communicates the message to viewers that such female behaviour is normal and often an acceptable way to achieve one's goal (Coyne, et al., 2010: 293). In contrast to relational aggression, physical violence, a principal indicator of current TV rating standards, does not play a major role in reality TV shows. TV rating standards therefore currently fail to indicate the high levels of relational aggression, or 'meanness', in these programs.

5.1.2.2. *Different forms of media-based violence*

Violence is even more pervasive in video games than on TV, both in terms of frequency and duration (Wilson, 2008). However, media also differ with regard to *how* violence is depicted. Also, there are substantial differences in terms of *specific media characteristics*, which may affect the recipient's perception of violent content and the impact of media violence.

Both TV and video games primarily address visual perception in the recipients, yet there are considerable differences between the two types of media (cf. Carnagey & Anderson, 2004). For example, a constant pressure to act, often in real time, is put on the players in most games. In order to pursue the objectives of a video game, players are therefore required to focus continuously their attention on ongoing events. In contrast, TV viewers typically pay less attention to the program. They often engage in additional, or secondary, activities, like having dinner, holding conversations, or doing domestic work. Violent game content thus receives more attention than violence in TV programs.

Stronger levels of identification with violent characters in the media are related to higher levels of aggression (Huesmann, et al., 2003). In contrast to most TV programs, however, identification is much easier in video games because there are fewer characters to identify with. Identification is further supported in so-called first-person games (e.g., shooter games), in which the player sees the virtual world through the eyes of the character. A first-person point of view supports spatial self-presence, that is, the feeling of *being present in* the game (e.g., Ijsselstein, et al., 2001). In addition, game settings often allow for character modifications, for example by selecting the character's

gender, personality and appearance. Matching the violent game character to the player's fantasies also adds to the process of identification. It has been demonstrated that the most aggressive participants were those who had played a violent game and wished they were like the violent character in the game (Konijn, et al., 2007). Finally, technological advancements increase the players' sense of involvement, which supports identification with in-game characters (Persky & Blascovich, 2006).

Aggressive behaviour that is successful, or *reinforced*, will increase the likelihood of aggressive behaviour in the future, thereby reflecting a basic learning principle. Moreover, this basic mechanism also applies to *observing* successful aggressive behaviour (so-called social learning; Bandura, 1973; Eron, et al., 1971). With regard to movies and TV programs, however, the observer receives only indirect (and delayed) reinforcement by watching movie characters acting aggressively that are later gratified through goal attainment. In video games, however, reinforcement is immediate and direct; positive feedback through visual effects and sound, verbal confirmation ('nice shot'), or access to higher game levels indicates individual game success and therefore serves as an instant reward for violent behaviour.

Technically, immediate reinforcement in video games is based on interactivity (Dix, et al., 2004), which denotes the continuous exchange, or input/output loop, between the user's actions (input) and the interactive system's altered state or reaction that will then be displayed on the screen immediately (output). In interactive systems like video games, players experience themselves as *causal agents* repeatedly (Klimmt & Hartmann, 2006). Causal agents determine the course of events — they press the mouse button, and the enemy in the violent video game dies as a consequence thereof. In addition to perceptions of causality, games further motivate players by providing a balance between challenges and individual skills needed to cope or master them. Mastering challenges in the game leads to experiences of self-efficacy, that is, the individual belief that one is able to achieve one's desired outcomes in particular situations (Bandura, 1977 cited in Klimmt & Hartmann, 2006). With each game level of increasing difficulty the player masters, gaming skills will also increase, and the player will feel more confident about his or her ability to control the course of events. Repeated subjective experiences of control, of causality, and of efficacy are those aspects of interactivity that make electronic games so popular and attractive for children (Klimmt & Hartmann, 2006). Moreover, the interactivity of video games was found such a mighty motivator for children that being successful in violent video games even induces illusory perceptions of overcoming personal or social inferiority or compensating frustrations from peer rejection (e.g., Kirsh, 2006).

5.1.3. Theoretical frameworks

Numerous theoretical frameworks have been suggested that address the relation between aggression and exposure to violent media content. A detailed analysis of all accounts is beyond the scope of this chapter (for a review, see

Kirsh, 2006). Therefore, Table 1 presents a short overview of the most important frameworks. Only the *Catharsis* and *Inhibition* theses predict a 'positive' effect in terms of reductions in aggression following violent media exposure. However, both theories are lacking scientific evidence. In contrast, there is great support from empirical research for theoretical accounts that predict increases in aggression after violent media consumption. These accounts are by no means mutually exclusive. Rather, the General Aggression Model has proven fruitful because it integrates major aspects of cognitive, affective, and behavioural models, and also takes into account short-term and long-term effects as well as individual and situational factors.

Table 1: Theories on the effects of media violence exposure

Name	Major assumptions and empirical status	Selected references
Catharsis; Inhibition	Postulates a natural 'aggression drive' in humans, which must be acted out either in real situations or in the mind. When acted out, this always leads to decreases in aggression (catharsis). Inhibition means that violent media content leads to anxiety, which in turn inhibits aggressive behaviour. Although both theories lack scientific evidence, catharsis theory is still popular among video game players.	Feshbach, 1961; Bushman & Whitaker, 2010
Desensitization & Habituation	Constant consumption of media violence leads to a decrease of sensitivity towards violence. Aggressive behaviour is seen as the norm. Hence, people become 'comfortably numb' to the pain and suffering of others and are consequently less helpful.	Bushman & Anderson, 2009
Social learning theory	Media characters act as role models that trigger processes of observational learning. Repeatedly observing violent behaviour in the media establishes cognitive scripts (i.e., sequences of expected behaviours for a given situation), which are stored in the recipient's memory and may trigger the performance of aggressive behaviour.	Bandura, 1973; Eron, et al., 1971
Priming & Script theory	Violent stimuli in the media activate aggressive feelings or thoughts already stored in a person's memory. Primed thoughts and aggressive scripts will then trigger aggressive responses.	Huesmann, 1998
Excitation-Transfer-Theory	Previous contact with emotional media content leads to arousal (excitation), which may cause subsequent interpretations (transfer) of unspecific emotional conditions in unrelated situations as being aggressive.	Zillmann, 1988
General Aggression Model	GAM integrates several theories. Media violence exposure leads to an immediate increase in aggression by affecting emotion, physical arousal, or cognition	Anderson, et al., 2010; Anderson,

Name	Major assumptions and empirical status	Selected references
(GAM)	(short-term effect), but also contributes to the development of an aggressive personality (long-term effect). Repeated confrontation with virtual violence activates and strengthens aggression-related structures, which, in turn, may reinforce normative beliefs about the appropriateness of aggressive responses.	et al., 2007; Bushman & Anderson, 2002
General Learning Model (GLM)	Like GAM, the GLM assumes that media exposure affects internal variables (i.e., emotions, cognitions, and arousal). However, 'positive' media can also have positive effects. Thus, depending on the content of the media, either negative or positive effects of media exposure on social behaviour are to be expected.	Buckley & Anderson, 2006

5.1.4. Media effects

A wealth of studies has been published on the effects of violent media that measure different dependent variables reflecting indicators of aggression, namely physiology, emotion, cognition, and behaviour. An important question refers to the causal order of aggression and violent media — do people use violent media, because they *already have* an aggressive personality, or do violent media *cause* aggression in the recipients? Results from longitudinal studies rather support the so-called *effect hypothesis* (violent media content leads to aggression) than the *selection hypothesis* (aggressive people choose violent media content; Anderson, et al., 2010). A third option is a downward spiral of violent media and aggression — an existing interest in aggressive content is further intensified by violent media consumption, which, in turn, leads to higher levels in aggression in the consumer of media violence (Slater, et al., 2003).

Although the overwhelming number of authors claims a causal relationship between violent media content and aggressive behaviour (i.e., media violence is harmful), some authors doubt this interpretation (publication bias: Ferguson, 2007; methodological problems: Savage & Yancey, 2008). Recently, however, this criticism was addressed carefully and rejected (Anderson, et al., 2010).

The effects of violence on TV are relatively well researched (e.g., Murray, 2008). Irrespective of being a young research area, the video game medium has received much attention lately. In this overview, we will therefore focus on the effects of violence on TV and in video games. The impact of violence in music, in music videos and on the Internet will only be described briefly (see section 4.3).

5.1.4.1 Findings from meta-analyses

Meta-analyses aggregate studies and findings to specific research questions in the literature across different methodological approaches. They are therefore

the data source that provides the most convincing information. Paik and Comstock's (1994) analysis of 217 studies on the relation of TV violence reception and aggressive behaviour indicated a substantial positive relationship (i.e., a harmful effect) in field studies as well as experimental studies. Thus, TV violence was shown to increase antisocial behaviour, an effect that was only slightly stronger for males than for females.

Anderson and Bushman (2001) found in 35 studies that frequent players of violent video games showed increases in *aggressive behaviour* (e.g., the more a person played violent video games, the more aggressive behaviour was observed, both towards other people and towards objects), *aggressive cognition* (e.g., playing violent video games led to more aggressive thoughts), *aggressive emotions* (e.g., greater hostility after playing violent video games), and *physiological arousal* (e.g., increased blood pressure and heart rate for frequent players of violent video games). In contrast, playing violent video games was associated with a decrease in *prosocial behaviour* (e.g., playing violent games makes helping others less likely). The effects of violent video games are therefore present both in short-term (e.g. bodily arousal) and long-term indicators of aggression (e.g., aggressive personality).

In a recent overview, Anderson and his colleagues (2010) confirmed that video game violence exposure is positively related to indicators of aggression. Effects were statistically reliable irrespective of methodological design; significant effects were found in experiments, longitudinal studies, and cross-sectional studies (i.e., correlational studies that measure the relationship of variables at only one point in time). Furthermore, violent video game exposure was also significantly related to lower levels of prosocial behaviour, a decrease in empathy and an increase in desensitization, that is, a decreased sensitivity to violence and a greater willingness to tolerate increasing levels of violence.

In sum, meta-analyses on violence in video games mirror findings on TV and movie violence, with some evidence that effects may be even larger for the video game medium (Anderson, et al., 2007; Polman, et al., 2008). Disagreement still remains, however, with regard to the strength of effects, the underlying mechanisms, and to the question whether findings may be transferred to the general population.

5.1.4.2 Findings from other methodological approaches

Different methodological designs have been used to study the effects of violent media. Immediate, or short-term, *cognitive effects*, are interpreted typically as reflecting the result of an activation, or priming, of existing knowledge structures, such as various types of schemata or scripts (Huesmann, 1998). As an example, violent video games were shown to affect the accessibility of aggressive self-concepts. Participants who had played the violent video game *Doom* for 10 minutes associated the self more with aggressive traits and actions than a control group that had played a nonviolent game (Uhlmann & Swanson, 2004). Violent video games have also been demonstrated to accelerate responses to violent stimuli in a subsequent

reading speed test (Anderson & Dill, 2000) and to increase expectations of aggressive content when completing open (i.e., neutral) stories (Bushman & Anderson, 2002). In addition, playing violent video games increased the number of aggression-related words in a word completion task with ambivalent word stems, thereby demonstrating that violent content primes violent thoughts (Anderson & Carnagey, 2009). Other experiments (e.g., Bushman & Anderson, 2002) found that violent video games intensified the so-called hostile attribution bias, i.e. the tendency to perceive social interactions as being aggressive.

With regard to the *physiological effects* of video games, higher levels of arousal were found for violent compared to nonviolent games (e.g., Carnagey, et al., 2007). A similar pattern was found for TV: violent content led to greater effects on several physiological stress indicators (e.g., heart rate variability, cortisol hormone) than nonviolent content (Maass, et al., 2010). Interestingly, participants' level of arousal decreased even within the 20 minutes that they played the violent game, thereby indicating that desensitization might not be restricted to long-term consumption of violent media content (Bartholow, et al., 2006).

Video games can be exciting, fun, frustrating, exhilarating, and boring (Anderson et al., 2010: 5). However, experimental findings that support a negative influence of violent content in video games on *emotions* are rare (e.g., Anderson & Dill, 2000). In their meta-analysis, Anderson and colleagues (2010) found that the long-term effect of video game violence on aggressive affect was smaller than on aggressive cognition or behaviour. With regard to TV, however, literature shows a different picture. For example, TV news were shown to cause fear responses in children (for a review, see Smith, et al., 2008). Measuring *aggressive behaviour* in the lab is problematic. For ethical reasons, it is impossible to design experimental conditions that induce or give opportunity to real harm after media consumption, for example, by providing participants with weapons and then observe their behaviour. Therefore, valid indicators of *intentions to harm* others are required (for a critical review, see Ritter & Eslea, 2005). These measures include, for example, self-reports of conflicts (e.g., Gentile, et al., 2004), the amount of hot sauce to be consumed by a provoker who allegedly dislikes spicy food (e.g., Barlett, et al., 2009), or tasks in which the intensity and duration of white noise is measured that a person is willing to apply to an ostensible partner regardless of the fact that he or she was informed that these 'noise blasts' could cause permanent hearing damage (e.g., Konijn, et al., 2007). Using these measures, both experimental and survey studies support the claim that violent video games cause an immediate increase in aggressive behaviour (e.g., Anderson, et al., 2007), as well as a decrease in *prosocial behaviour*. Compared to their nonviolent counterparts, playing violent games leads to greater levels of aggressive responses (e.g., Konijn, et al., 2007), less empathic behaviour (Carnagey, et al., 2007), less donating behaviour (Melzer, et al., 2010), and less cooperative behaviour (Sheese & Graziano, 2005).

Polman and her colleagues (2008) used a realistic measure of aggression, namely peer nominations of aggressive incidents during a free play session at school. Their results suggested that the characteristic interactivity of video games supports the effect of violent content: students that played a violent video game later showed more aggression than their counterparts that watched violent TV. Boxer et al. (2009) used a multiple informant assessment based on parents/guardians and teachers/staff to validate that violent media exposure related significantly to engagement in violence and aggression in their sample, which also included juvenile delinquents detained in county or state detention facilities. Similarly, Gentile et al. (2004) reported a positive correlation between students' violent game use and disputes with teachers only for adolescents that were highly aggressive in personality. Further significant relationships are reported between video game use and actual aggressive behaviour (i.e., more physical fights) and academic performance (i.e., worse grades in school).

To date, only few studies have been reported on the long-term, or *persistent*, effects of violent video games on aggression in children and adolescents. Slater et al. (2003) tested the influence of violent video game use on dispositional aggression. Among other findings, it was shown that students who were frequently exposed to violent media and those who were lacking a caring adult in their social environment were later more aggressive than other students.

The majority of studies on long-term effects of media violence focus on the TV medium (for a review, see Huesmann & Kirwil, 2007). Generally, it is reported that exposure to violent TV content is correlated significantly with aggression as a personal attribute years later (e.g., Eron, et al., 1972). The effects mainly result from permanent changes in beliefs, expectancies, scripts, attitudes, and other related person factors, brought about by repeated exposure to media violence. Yet, variables like socioeconomic status, family background, and the level of trait aggression in the participants were shown to moderate the effects.

5.1.4.3 *Effects of violence in music, music videos and the Internet*

TV and video games are not the only relevant media sources in which violent content is presented. To date, however, research is dominated by studies on these two media types. With regard to exposure to Heavy Metal or Rap music in music videos, for example, findings indicate a facilitating effect on aggression, fear, and emotional desensitization (Smith & Boyson, 2002). Recently, experimental studies (Fischer & Greitemeyer, 2006) indicated a causal relationship: misogynous song lyrics triggered more negative stereotypes of women in male participants, who also reported more feelings of vengeance than when they heard neutral song lyrics. Female participants showed similar a pattern of results toward men when they had listened to men-hating songs.

The major strength of the Internet (also see, in this volume, Koops 'The Internet') — the permanent availability of unlimited sources of information — also poses a general problem. The risks are difficult to assess, as the dangers are as multifaceted as the content. Exposure to violent or pornographic pictures and videos, violent online games, and technical instructions to build weapons are just some examples that illustrate the diversity of potentially harmful aspects of the Internet. Not surprisingly, the influence of web site content on younger users has received great attention. Unfortunately, scientific research on the effects of violent content on the Internet is still sparse. It has been suggested that the basic knowledge on the effects of media violence so far should also be applicable to the Internet (Anderson, 2003). The Internet also provides opportunities for persons to carry out aggressive acts directly against a selected victim. The so-called cyber bullying appears as a meaningful and pervasive phenomenon, which may occur against anyone, anywhere, and at any time in the Internet and with other communication devices, like mobile phones. The perpetrators benefit from the breadth of the audience and the greater invisibility to hurt his victim intended and repeatedly (Steffgen & König, 2009). Research has reported a variety of emotional (anger, frustration, sadness) and behavioural consequences (recent school difficulties, assaultive conduct, substance use to the point of suicide) of cyber bullying (Hinduja & Patchin, 2009).

The common reaction of concerned parents, educators, and politicians toward media violence is oftentimes restrictive and even prohibitive *per se*. Yet, general prohibition itself may raise serious psychological issues. It is known, for example, that prohibition may induce or motivate unsupervised use of the devices or types of digital and interactive media in the first place, with media becoming a *forbidden fruit*, especially for young adolescents (Nije Bijvank, et al., 2009). In addition, once a certain form of technology has been established, it becomes social reality — people will use it anyway, and the wheel may then not be turned back.

Are there other, more constructive, ways to handle the issue of media violence? In contrast to presenting violence in every detail, media often fail to show the consequences for the victim. Recently, Konijn and her colleagues (2008) demonstrated that viewers of media violence showed strong empathic responses when the consequences of a violent act were highlighted. Teaching children and adolescents the (negative) consequences for the victim in violent media therefore seems to be promising for future *media literacy* programs. Media literacy has emerged as a crucial educational element in the process of consuming media. Being media literate includes the ability to think about the formal features of the medium and the content itself critically, and therefore refers to the ability to understand, analyze and evaluate messages in the media (Chakroff & Nathanson, 2008). Media literacy has also proven fruitful with regard to influencing children's interpretation of violent media as measured by a significant reduction in their aggressive thoughts and behaviour (Byrne, 2009). Watching videotaped court cases about real violence, for example, reduced middle school children's verbal and physical aggression and raised

their levels of empathy (Wilson, et al., 1999). However, interventions need to be custom-tailored to the specific needs of the audience and have to take into account factors like age, media expertise, and gender (Cantor & Wilson, 2003).

As to children and adolescents, research on the prevention of negative media effects on aggression has also focused on the role of parents as mediators of media consumption (also see in this volume, Tisseron, 'Que doivent faire les parents?'). The purpose of *parental mediation* is twofold; it aims at minimising the harmful effects, but also tries to maximise the benefits of media. Three forms of parental mediation have been identified (e.g., Nikken & Jansz, 2006). *Restrictive mediation* comprises rules or restrictions aimed at sheltering children from the media. Rules may involve, for example, the amount of time a child is allowed to watch TV or the specific shows that a child is restricted from viewing. *Active mediation* always involves discussion, for example, when parents have a dialogue with their child to facilitate the understanding of TV news (e.g., 'how do you think the person feels?'). Finally, *co-viewing* is defined as accompanying children's media consumption like watching television together with the child. In contrast to active mediation, *co-viewing* does not include explicit discussions. Research confirms that parental mediation as a form of intervention at home can promote positive effects and prevent harmful outcomes. However, parental mediation may also result in unintended effects that have to be taken into account. For example, children may interpret parental co-viewing as silent approval of violent content (for a review, see Chakroff & Nathanson, 2008).

5.1.5. Conclusion

Even media themselves may support the prevention of violence and aggression. In their overview of the literature, Happ et al. (*in press*) identified programs that made use of the advantages of interactive media (e.g., web sites, learning games) to support aggression prevention. Program evaluations confirmed improvements in school achievement, activity levels, and social skills. Likewise, programs were also shown to reduce truancy, attention problems, and problematic behaviour in social situations. Although the potential benefits of improved functioning in school alone are notable (Hahn et al., 2007), the broader and long-term benefits of media-supported prevention and intervention programs may be more substantial. To date, however, only few media-supported programs have been evaluated scientifically (Happ, et al., *in press*).

5.1.6. References

- Carnagey, N.L. & Anderson, C.A., 2004.
Violent video game exposure and aggression. A literature review. *Minerva Psychiatrica*, 45 (1): 1-18.
- Carnagey, N.L., Anderson, C.A. & Bushman, B.J., 2007.
The effect of video game violence on physiological desensitization to real life violence. *Journal of Experimental Social Psychology*, 43: 489-496
- Chakroff, J.L. & Nathanson, A.I., 2008.
Parent and school interventions: Mediation and media literacy. In: S. L. Calvert & B. Wilson, eds. 2008. *Handbook of child development and the media*, Boston: Wiley-Blackwell: 552-576.
- Coyne, S.M., Robinson, S.L. & Nelson, D.A., 2010.
Does reality backbite? Physical, verbal, and relational aggression in reality television programs. *Journal of Broadcasting & Electronic Media*, 54 (2): 282-98.
- Dill, K.E., 2009.
How fantasy becomes reality: seeing through media influence. New York, NY: Oxford University Press.
- Dix, A., Finlay, J., Abowd, G.D. & Beale, R., 2004.
Human-computer interaction. 3rd ed. Harlow, England: Pearson Prentice Hall.
- Eron, L.D., Walder, L.O. & Lefkowitz, M.M., 1971.
The learning of aggression in children. Boston: Little, Brown.
- Eron, L.D., Huesmann, L.R., Lefkowitz, M.M. & Walder, L.O., 1972.
Does television violence cause aggression? *American Psychologist*, 27: 253-263.
- Ferguson, C.J., 2007.
The good, the bad and the ugly: A meta-analytic review of positive and negative effects of violent video games. *Psychiatric Quarterly*, 78: 309-316.
- Feshbach, S., 1961.
The stimulating vs. cathartic effects of a vicarious aggressive activity. *Journal of Abnormal and Social Psychology*, 63: 381-385.
- Fischer, P. & Greitemeyer, T., 2006.
Music and aggression. The impact of sexual-aggressive song lyrics on aggression-related thoughts, emotions and behavior toward the same and the opposite sex. *Personality and Social Psychology Bulletin*, 32: 1165-1176.

- Klimmt, C. & Hartmann, T., 2006.
Effectance, self-efficacy, and the motivation to play video games. In: P. Vorderer & J. Bryant, eds. 2006. *Playing video games—motives, responses, and consequences*. Mahwah, NJ: Erlbaum: 133-145.
- Konijn, E.A., et al., 2008.
Babies against bullets: Empathy as an intervention technique in violent video game play. In: International Communication Association, Annual Meeting, Montreal, Quebec. 22-26 May, 2008.
- Konijn, E.A., Nije Bijvank, M. & Bushman, B.J., 2007.
I wish I were a warrior: The role of wishful identification in the effects of violent video games on aggression in adolescent boys. *Developmental Psychology*, 43 (4): 1038-1044.
- Maass, A., Lohaus, A. & Wolf, O.T., 2010.
Media and stress in adolescent boys in Germany. *Journal of Children and Media*, 4 (1): 18-38.
- Melzer, A., Happ, C. & Steffgen, G., 2010.
Empathy for the devil? Empathy and prosocial behavior in violent video games. In: ISRA (International Society for Research on Aggression), XIX ISRA World Conference. Storrs, Connecticut, USA 27-31 July, 2010.
- Murray, J.P., 2008.
Media violence: The effects are both real and strong. *American Behavioral Scientist*, 51: 1212-1230.
- Nije Bijvank, M., Konijn, E.A., Bushman, B.J. & Roelofsma, P.H.M.P., 2009.
Age and content labels make video games forbidden fruit for youth. *Pediatrics*, 123: 870-876.
- Nikken, P. & Jansz, J., 2006.
Parental mediation of children's videogame playing: A comparison of reports by parents and children. *Learning, Media and Technology*, 31 (2): 181-202.
- Paik, H. & Comstock, G., 1994.
The effects of television violence on antisocial behavior: A meta-analysis. *Communication Research*, 21: 516-546.
- Persky, S. & Blascovich, J., 2006.
Consequences of playing violent video games in immersive virtual environments. In: R. Schroeder & A.S. Axelsson, eds. 2006. *Avatars at work and play: Collaboration and interaction in shared virtual environments*. Dordrecht, NL: Springer: 167-186.

- Polman, H., Orobio de Castro, B. & Van Aken, M.A.G., 2008. Experimental study of the differential effects of playing versus watching violent video games on children's aggressive behavior. *Aggressive Behavior*, 34: 256–264.
- Ritter, D. & Eslea, M., 2005. Hot sauce, toy guns, and graffiti: A critical account of current laboratory aggression paradigms. *Aggressive Behavior*, 31: 401-419.
- Sheese, B.E. & Graziano, W.G., 2005. Deciding to defect: The effects of video-game violence on cooperative behavior. *Psychological Science*, 16 (5): 354-357.
- Savage, J. & Yancey, C., 2008. The effects of media violence exposure on criminal aggression: a meta-analysis. *Criminal Justice and Behavior*, 35: 772-791.
- Slater, M.D., Henry, K.L., Swaim, R.C. & Anderson, L.L., 2003. Violent media and aggressiveness in adolescents. A downward spiral model. *Communication Research*, 30 (6): 713-736.
- Smith, S.L. & Boyson, A.R., 2002. Violence in music videos: Examining the prevalence and context of physical aggression. *Journal of Communication*, 52: 61-83.
- Smith, S.L., Lachlan, K. & Tamborini, R., 2003. Popular videogames: Quantifying the presentation of violence and its context. *Journal of Broadcasting & Electronic Media*, 47 (1): 58-76.
- Smith, S.L., Pieper, K.M. & Moyer-Guse, E.J., 2008. News, reality shows, and children's fears: Examining content patterns, theories, and negative effects. In: S.L. Calvert & B.J. Wilson, eds. 2008. *The handbook of children, media, and development*. Chichester, West Sussex, UK: Wiley-Blackwell: 215-34.
- Steffgen, G. & König, A., 2009. Cyberbullying: The role of traditional bullying and empathy. In: B. Sapio, et al., eds. 2009. *The Good, the Bad and the Challenging: The user and the future of information and communication technologies*. Conference Proceedings (Volume II): 1041-1047.
- Television Bureau of Advertising, 2010. *TVB 2010 Media comparisons study*. [Internet] Available at: <http://www.tvb.org/central/mediatrendstrack/mediatrendstrack.asp> [Accessed 18 August 2010].

Uhlmann, E. & Swanson, J., 2004.

Exposure to violent video games increases automatic aggressiveness. *Journal of Adolescence*, 27: 41-52.

Wilson, B.J., 2008.

Media violence and aggression in youth. In: S.L. Calvert & B.J. Wilson, eds. 2008. *The handbook of children, media, and development*. Chichester, West Sussex, UK: Wiley-Blackwell: 237-267.

Wilson, B.J., et al., 1999.

The choices and consequences evaluation: A study of Court TV's antiviolenace curriculum. Santa Barbara, CA: Center for Communication and Social Policy, University of California.

Zillmann, D., 1988.

Mood management: Using entertainment to full advantage. In: L. Donohew, H.E. Sypher, & E.T. Higgins, eds. 1988. *Communication, social cognition, and affect*. Hillsdale, NJ: 147-171.