ABSTRACT

Violence is one of the major worldwide concerns today in all segments of society. Antisocial behavior in humans is known to be related to a number of physiological, psychological, familial, and cultural factors. The learning conditions to which a child is exposed are also believed to contribute to the development of aggressive behavior and attitudes. One specific learning condition, media violence, is considered to be a potential contributor to the development of antisocial behavior in children and adolescents.

Numerous studies have been conducted in the field of media violence and its effects on the young viewers. A major focus has been the relationship between media violence and aggressive behavior, but, interestingly, research regarding the relationship between media violence and attitudes about aggression is sparse. The purpose of this study, therefore, was to contribute to the state of the research by predicting and comparing attitudes about aggression among adolescent boys on the basis of their exposure to violence in both movies and video/computer games.

The study employed a survey research design. Two hundred and three adolescent boys aged 13-16 were selected from two public schools on Vancouver Island. The data were collected using four instruments: the Demographic Questionnaire, the Media Entertainment Questionnaire, the Attitudes and Beliefs Regarding Aggression Scale (Vernberg, Jacobs, & Herschberger, 1999), and the Perception of Movie Reality Scale (based on Greenberg, Linsangan, & Soderman, 1994).

The results indicated that adolescent boys spend a significant amount of time both watching movies and playing video/computer games. In addition, they are exposed to
substantial amounts of media violence. At the same time, parental involvement with their adolescents' movie-viewing and game-playing habits is relatively limited.

Further results showed that heavy and light viewers of movie violence did not differ on a statistically significant level in any dimension of their attitudes about aggression. Real and fiction perceivers, as well, did not differ in their attitudes. Adolescents with "violent" game repertoires, however, were significantly more supportive of the attitude that aggression is legitimate and warranted, as compared to those whose repertoires contained little or no violence. Additional results demonstrated that the "aggression-legal" attitude was significantly related to a set of predictor variables. The strongest predictors of this attitude in adolescent boys were parental involvement with their adolescents' movie-viewing, game-playing habits, and the adolescents' game repertoires.

The results obtained in this study are discussed in terms of implications for both violence-prevention programs and media-awareness classes. Suggestions for future research are also offered.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ABSTRACT</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>........................</td>
<td>ii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>viii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>ix</td>
</tr>
</tbody>
</table>

## CHAPTER

### I. INTRODUCTION

- Background ................................................................. 1
- Statement of the Problem ........................................ 3
- Purpose of the Study .................................................. 5
- Research Questions ..................................................... 5
- Definitions of the Terms ............................................. 6
- Assumptions .............................................................. 8

### II. LITERATURE REVIEW

- Overview ........................................................................ 9
- Attitudes Toward Violence ........................................... 9
- Theories of Media-Induced Aggression .......................... 11
- Emotional Effects of TV Violence ................................ 13
- Behavioral Effects of TV Violence ............................... 13
  - Catharsis .................................................................. 14
  - Arousal ...................................................................... 14
  - Disinhibition ............................................................ 15
  - Imitation .................................................................... 15
- Cognitive Effects of TV Violence ................................ 16
- Intervening Variables in the Relationship Between TV and Antisocial Behavior ........................................ 21
  - Developmental Level ................................................ 21
  - Gender Differences ................................................. 22
  - Perception of Televised Violence ............................... 23
  - Focus of Attention .................................................. 24
  - Family Environment ................................................ 25
- Computer and Video Games ......................................... 28
- Summary ....................................................................... 31
III. METHODOLOGY

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>33</td>
</tr>
<tr>
<td>Sample</td>
<td>33</td>
</tr>
<tr>
<td>Instrumentation</td>
<td>34</td>
</tr>
<tr>
<td>The Demographic Questionnaire</td>
<td>34</td>
</tr>
<tr>
<td>The Media Entertainment Habits Questionnaire</td>
<td>34</td>
</tr>
<tr>
<td>The Attitudes and Beliefs Regarding Aggression Scale</td>
<td>35</td>
</tr>
<tr>
<td>The Perception of Movie Reality Scale</td>
<td>37</td>
</tr>
<tr>
<td>Pilot Study</td>
<td>39</td>
</tr>
<tr>
<td>Data Collection</td>
<td>39</td>
</tr>
<tr>
<td>Procedure for Data Analysis</td>
<td>41</td>
</tr>
</tbody>
</table>

IV. RESULTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>43</td>
</tr>
<tr>
<td>Preliminary Results</td>
<td>43</td>
</tr>
<tr>
<td>Response Rate</td>
<td>43</td>
</tr>
<tr>
<td>Sample Characteristics</td>
<td>44</td>
</tr>
<tr>
<td>Age</td>
<td>44</td>
</tr>
<tr>
<td>Race</td>
<td>44</td>
</tr>
<tr>
<td>Family Structure</td>
<td>44</td>
</tr>
<tr>
<td>Reliability of the Instruments</td>
<td>45</td>
</tr>
<tr>
<td>The Attitudes and Beliefs Regarding Aggression Scale</td>
<td>45</td>
</tr>
<tr>
<td>The Perception of Movie Reality Scale</td>
<td>48</td>
</tr>
<tr>
<td>Parental Movie Mediation Index</td>
<td>50</td>
</tr>
<tr>
<td>Limits on Game Playing Index</td>
<td>51</td>
</tr>
<tr>
<td>Main Results</td>
<td>52</td>
</tr>
<tr>
<td>Media Entertainment Habits</td>
<td>52</td>
</tr>
<tr>
<td>Movie Viewing</td>
<td>52</td>
</tr>
<tr>
<td>TV Movies</td>
<td>52</td>
</tr>
<tr>
<td>Videocassette Movies</td>
<td>52</td>
</tr>
<tr>
<td>Movie Theatre Going</td>
<td>53</td>
</tr>
<tr>
<td>Total Viewing</td>
<td>53</td>
</tr>
<tr>
<td>Movie Repertoires</td>
<td>53</td>
</tr>
<tr>
<td>Game Playing</td>
<td>55</td>
</tr>
<tr>
<td>Game Repertoires</td>
<td>56</td>
</tr>
<tr>
<td>Parental Movie Mediation</td>
<td>57</td>
</tr>
<tr>
<td>Parental Game Control</td>
<td>58</td>
</tr>
<tr>
<td>Determining Groups of Viewers and Players</td>
<td>59</td>
</tr>
<tr>
<td>Low/High Exposure to Movie Violence</td>
<td>59</td>
</tr>
<tr>
<td>Real/Fiction Perception of Movie Reality</td>
<td>59</td>
</tr>
<tr>
<td>&quot;Violent&quot;/&quot;Non-Violent&quot; Game Repertoires</td>
<td>60</td>
</tr>
<tr>
<td>High/Low Parental Involvement</td>
<td>60</td>
</tr>
</tbody>
</table>
Attitudes and Beliefs Regarding Aggression ........................................... 61
Differences in Attitudes About Aggression Between Groups of Viewers ........................................... 62
  Aggression is Legitimate and Warranted ........................................... 63
  Aggression Enhances Power and Status ........................................... 64
  One Should Not Intervene in Fights ........................................... 66
  Summary ........................................................................... 68
Differences in Attitudes About Aggression Between Groups of Players ........................................... 69
Prediction of Attitudes About Aggression ........................................... 71

V. DISCUSSION

Overview ........................................................................... 75
Adolescent Boys’ Media Entertainment Habits ........................................... 75
  Movie Viewing ........................................................................... 75
  Game Playing ........................................................................... 76
  Parental Movie Mediation .................................................. 78
  Parental Game Mediation .................................................. 79
Adolescent Boys’ Attitudes About Aggression ........................................... 80
Differences in Attitudes Between Groups of Viewers ........................................... 81
Differences in Attitudes Between Groups of Players ........................................... 88
Prediction of Attitudes About Aggression ........................................... 89

VI. CONCLUSIONS, LIMITATIONS, IMPLICATIONS, AND RECOMMENDATIONS

Overview ........................................................................... 94
Conclusions ........................................................................... 94
Implications and Recommendations ........................................... 97
Limitations ........................................................................... 100
Recommendations for Future Research ........................................... 100
REFERENCES ........................................................................... 102
APPENDICES ........................................................................... 116
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Response Rate of the Questionnaires.</td>
<td>43</td>
</tr>
<tr>
<td>Table 2</td>
<td>Cronbach’s Alpha of the ABRA Versions.</td>
<td>47</td>
</tr>
<tr>
<td>Table 3</td>
<td>Subscales Intercorrelations of the ABRA Versions.</td>
<td>47</td>
</tr>
<tr>
<td>Table 4</td>
<td>Cronbach’s Alpha and Subscale Intercorrelations of the PMR Scale.</td>
<td>50</td>
</tr>
<tr>
<td>Table 5</td>
<td>Parental Involvement with Adolescents’ Movie-Viewing Habits.</td>
<td>58</td>
</tr>
<tr>
<td>Table 6</td>
<td>Parental Involvement with Adolescents’ Game-Playing Habits.</td>
<td>58</td>
</tr>
<tr>
<td>Table 7</td>
<td>Means and Group Sizes for the Aggression Legitimate Subscale.</td>
<td>63</td>
</tr>
<tr>
<td>Table 8</td>
<td>Three-way ANOVA for the Aggression Legitimate Subscale.</td>
<td>64</td>
</tr>
<tr>
<td>Table 9</td>
<td>Means and Group Sizes for the Aggression Pays Subscale.</td>
<td>65</td>
</tr>
<tr>
<td>Table 10</td>
<td>Three-way ANOVA for the Aggression Pays Subscale.</td>
<td>65</td>
</tr>
<tr>
<td>Table 11</td>
<td>Means and Group Sizes for the Stay Out Subscale.</td>
<td>67</td>
</tr>
<tr>
<td>Table 12</td>
<td>Three-way ANOVA for the Stay Out Subscale.</td>
<td>67</td>
</tr>
<tr>
<td>Table 13</td>
<td>Results of Two-sample T-tests Between Two Groups of Players.</td>
<td>70</td>
</tr>
<tr>
<td>Table 14</td>
<td>The Results of Multiple Regression Analyses for the Three Criteria Variables.</td>
<td>72</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

I would like to thank my supervisor, Dr. C. Brian Harvey, for his help and encouragement during my time as a student at the University of Victoria.

I would also like to thank my committee members: Dr. John O. Anderson, for his time, patience, and advice through data analyses; Dr. Ted J. Riecken for his advice and support during my research process; and Dr. Robert Fowler for his time and expertise.

Special thanks to my friends from Russia, Romania, Kazakhstan, Tajikistan, and Ukraine for their support and faith in me. A particular thank you to my Canadian friends and schoolmates for their help and encouragement throughout the process of writing up this thesis.

My greatest thanks go to the members of my family for their understanding and unconditional love that helped me finish my studies.
DEDICATION

To my parents, Aleksei Novozhylov and Vera Novozhylova, whose care, love, and support were and are always with me; whose faith in me exceeds all understanding; and whose teaching never to give up helps me move on.

Мамино Благословение*

Иди, пытайся...и дойдешь,  
Всего добьешься и сумеешь.  
Шагай вперед. Всегда вперед  
К поставленным тобою целям.

Не забудь лишь, дочка, то,  
Что главное в жизни - люди.  
Не пройди мимо чужой беды  
И будь опорой в нуждах.

Пусть свет излучают глаза.  
Пусть светлой будет голова.  
Пусть сильной будет воля.  
Пусть легкой будет доля.

Не забудь лишь только одно:  
Превыше всего - любовь и добро,  
И сердце наше велико  
Помочь в невзгодах другу.

*Mother’s Blessing - a poem I wrote for my mom.
CHAPTER 1
INTRODUCTION

Background

Violence is one of the major worldwide concerns today in all segments of society. People commonly read or hear about gang battles, shootings, bombings or actually become victims of such actions. These events are only the most extreme examples of the aggression that takes place everyday. Recent studies in the United States of America (USA) indicate both that teenagers are the most common victims of violent crime, often involving guns, and that they experience rape, robbery and assaults at two to three times the rate of adults (Finkelhor & Dziuba-Leatherman, 1994). Canadian statistics are not as alarming, although it might be that they reflect only those situations that come to the attention of law enforcement authorities. Other forms of aggression and violence, which may take place at home, in dating relationships, or in peer confrontations may not make official statistical counts (Strom-Gottfried & Singer, 1995).

Aggressive behavior in humans is known to be related to a number of physiological, psychological, familial, and cultural factors. The specific learning conditions to which the child is exposed are also believed to contribute to the development of antisocial behavior (Berkowitz, 1993). Recently, researchers and educators introduced the idea that attitudes toward real-life violence play a mediating role in the translation of hostile feelings into aggressive behavior (Velicer, Huckel, & Hanson, 1989). Thus, attitudes might have an important influence on behavior, particularly on violent behavior (Kraus, 1995).
Media violence is confirmed to be a potential contributor to the development of antisocial behavior in children and adolescents (Ledingham, Ledingham, & Richardson, 1993). Concern about media violence goes back to the 1920s. At that time the earliest coordinated social scientific research investigation into the impact of media violence began in the USA. It was aimed at studying the negative impacts of movies and comics. The growth of television as a popular mass entertainment and information medium during the 1950s encountered similar concerns about potential harms, especially in connection with young audiences (Gunter, 1994).

A major issue in the debate about TV violence has been whether or not it causes aggressive behavior among viewers (Van Evra, 1990). The link between heavy exposure to TV violence and subsequent aggressive behavior has been studied for more than thirty years. A large body of experimental and longitudinal research on this question has been evaluated, and it has been determined that there is a link between viewing TV violence and aggressive behavior (APA, 1993). There is also research indicating that heavy exposure to screen violence can cause problems in other domains of social behavior. For example, it can make people become both fearful of the world around them and more accepting of violence in the real life as displayed by others (Singer & Singer, 1980).

Nowadays, many concerns have been raised about the kinds of values and attitudes that may be inculcated by exposure to certain kinds of media content, especially violence in music videos and movies (Kubey & Larson, 1990). During the last decade, accusations within the media have also been made against violent computer and video games, the popularity of which among adolescents is rising (Scott, 1995).
While researchers work on determining the major etiological forces of violence, such as social conditions, cultural norms, family upbringing, and group membership (Fraser, 1996; Staub, 1996), politicians, parents, teachers and school administrators continue blaming the media for increases in violence rates among adolescents. For example, school principals, mothers, and young people were surveyed for their perceptions of factors influencing violence among youth (Kandakai, Price, & Telljohann, 1999; Price & Everett, 1997; Pryor, Sarri, & Bombyk, 1999). The results revealed that violent messages in rap music and violence in the movies are perceived as the factors influencing violence. Moreover, the results indicated that media violence was perceived to be one of the major causes of violence in 47-54% of the questionnaires. Clearly, media violence is not in itself a sufficient cause of real world violence (Zuckerman, 1996). However, as the numerous studies show, parents’ and school personnel’s concerns about media violence are justified.

Statement of the Problem

Although much of the research has focused on exposure to media violence as a factor contributing to antisocial behavior (Groebel, 1998), some effects of media violence have been examined more extensively than others. Woodfield (1989), in her review of the literature, argued that the major concern in the field has been the causal relationship between TV violence and aggressive behavior, and that there were far fewer studies that focused on the more subtle, but not less profound, cognitive and affective consequences of exposure to media violence. The same idea was expressed by Rule and Ferguson
(1986), who stated that there seemed to be “sparse research regarding the relation between media exposure and attitudes toward aggression” (p.39).

Upon reviewing the literature for this study, it has become apparent that research directly investigating the relation between media violence and attitudes has tended to focus on the acceptance of violence toward women (Malamuth & Check, 1981; St.Lawrence & Joyner, 1991). Only a few published studies examined the effects of exposure to media violence on attitudes toward violence. Moreover, results of these studies are mixed. Some researchers found that the greater the level of exposure to television violence, the more the child was willing to suggest violence as a solution to conflict, to perceive it as effective, and to become more accepting of violent behavior displayed by others (Dominick & Greenberg, 1972; Drabman & Thomas, 1974a, 1974b). Others did not find any meaningful support for the hypotheses that high exposure to television violence caused adolescents to accept violence as a way to solve their problems, and that exposure to television violence made them more callous in relation to near or distant violence in the world around them (Belson, 1978; Woodfield, 1989).

Despite the fact that there is little research evidence to confirm attitudinal changes as a result of exposure to media violence, it is a pervasive theme throughout the empirical literature that heavy exposure to violent messages conveyed in the media influences and shapes individual attitudes toward violence in the real world. For example, it is often encountered that heavy viewers of TV/video violence tend to accept violence as a solution to conflicts and perceive it as an effective means of settling disputes (Potter, 1998), that viewers might believe that it is fairly common for people to fight, and that
aggression is proper and acceptable in many different real-life situations (Berkowitz, 1993). Thus, more research is needed to test the empirical evidence.

It should also be mentioned that the majority of research presented above was experimental, and it is clear that the results could be different in the natural environment. In addition, research was conducted mostly with children, which makes it difficult to make generalizations on other age groups.

Since adolescent boys are the main audience of movies with violent content, and their culture also includes violent computer and video games, often human-directed (Funk & Buchman, 1995), it is considered worthwhile to conduct a study exploring adolescents’ attitudes toward violence on the basis of their exposure to screen violence, both passive (movies) and interactive (video/computer games).

Purpose of the Study

The general purpose of this study is to contribute to the state of the research by examining violence-related attitudes among adolescent boys on the basis of their exposure to media violence. The specific purpose of this study is to predict and compare violence-related attitudes between the groups of viewers and players. The results of this study will provide information useful for violence-prevention programs.

Research Questions

The present study addresses five research questions:

Research question 1:

What are the media entertainment habits of adolescent boys aged 13-16?
Research question 2:

What are the attitudes and beliefs of these adolescent boys regarding aggression?

Research question 3:

Are there differences between heavy and light viewers of movie violence regarding the belief that
- aggression is legitimate and warranted?
- aggression enhances power and status?
- one should not intervene in fights?

Research question 4:

Are there differences in attitudes about aggression between those who play “violent” and those who play “non-violent” video/computer games?

Research question 5:

How well do media entertainment habits, perception of movie reality, and parental involvement with media entertainment habits predict adolescent boys’ attitudes about aggression?

Definitions of the Terms

Aggression is defined as “some kind of behavior, either physical or symbolic, that is carried out with the intention to harm someone” (Berkowitz, 1993, p.11).

Antisocial behavior refers to persistent violations of behavior patterns deemed socially appropriate. The term is characterized by a broad scope of aggressive and coercive behaviors, both verbal and physical aggression (Walker, Colvin, & Ramsey, 1995).
Attitude is a way of thinking about either a real or imagined event. Attitudes are believed to guide information processing. They are developed through a complex and selective evaluative process based on cognitive and affective reactions to life experiences (Eiser & van der Pligt, 1988).

Bullying is defined as physical or psychological abuse toward individuals who are typically not able to defend themselves readily (Hoover, Oliver, & Thomson, 1993).

Hostility is “a negative attitude toward one or more people that is reflected in a decidedly unfavorable judgment of the target” (Berkowitz, 1993, p.16).

Passive media in the present study will include TV movies, videocassette movies and theatre movies. The concept “passive” reflects the idea that viewers are exposed to story telling with visual and sound effects, color and animation. However, active involvement of the viewer is not required. Video and computer games belong to interactive media because they require more attention and active involvement of the player, and also give an opportunity to direct the story (Griffiths, 1991; Irwin & Gross, 1995).

Real perceivers are viewers who perceive screen reality as real. Such viewers are more susceptible to the stories conveyed in movies, and they readily accept this portrayal of life as real (Berkowitz, 1993).

Fiction perceivers are viewers who perceive screen reality as fiction. Such viewers consider movie stories to be decidedly unreal, and they do not perceive them as accurate depicters of life (Berkowitz, 1993).

Violence is used to refer to “an extreme form of aggression, a deliberate attempt to do serious physical or emotional injury” (Berkowitz, 1993, p.11).
Assumptions

The following assumptions were expected to prevail throughout the study:

1. The participants were honest with their responses;

2. The participants accurately carried out the instructions provided by the researcher;

3. The participants accurately reflected their media entertainment habits.
CHAPTER 2
LITERATURE REVIEW

The present study will be based on five areas discussed in the professional literature: (a) attitudes toward violence, (b) theories of media-induced aggression, (c) effects of television violence, (d) intervening variables in the relationship between media and social behavior, (e) effects of violent computer and video games.

Attitudes Toward Violence

Attitudes toward violence are viewed as having an important mediating role in the translation of hostile feelings into aggressive behaviors (Velicer, Huckel, & Hansen, 1989). Moreover, researchers have begun to identify social attitudes that may be responsible for cultural variations in rates of violence (Cohen & Nisbett, 1994).

It is stated that attitudes are determined by internal value systems (Mueller, 1986). Individuals develop attitudes through a complex and selective evaluative process based on cognitive and affective reactions to life experiences (Eiser & van der Pligt, 1988). From a social-cognitive perspective, attitudes are believed to guide individual differences in social information processing. For example, beliefs that aggression is necessary to achieve desired outcomes may lead a person to attend more to hostile aspects of social cues or anticipate positive outcomes for aggressive behavior (Dodge, 1993).

It is generally accepted that attitudes have an important influence on behavior, particularly violent behavior (Kraus, 1995). Relationships have been found between particular attitudes and violent behavior in children and adolescents. Huesmann and Guerra (1997) found that during middle childhood, children’s beliefs that aggression is
acceptable have been found to correlate moderately with self-reported aggression and at a low but statistically significant level with peer-reported aggression.

Another study by Vernberg, Jacobs and Hershberger (1999) examined attitudes about violence as a possible influence on the frequency of commonplace aggression toward peers. The results showed that the relation between attitudes favoring violence and self-reported aggression toward peers was substantial in the sample of 1,000 young adolescents. A positive association between proviolence attitudes and actual violent behavior has been also found in a sample of youth from juvenile detention and school settings (Slaby & Guerra, 1988). It was found that beliefs about the acceptability of aggression and conflict management skills were each significant and independent predictors of aggressive behavior. Violence-related beliefs were related to self-reported violent behavior in a study of low-income African American youth (Cotten, Resnick, Browne, Martin, McCarraher, & Woods, 1994). An intervention designed to change violence-related beliefs resulted in decreased aggressive behavior in adolescents incarcerated for violent offences (Guerra & Slaby, 1990). Given that attitudes influence behavioral predispositions, changing attitudes should contribute to behavioral change (Shapiro, Dorman, Burkley, Welker, & Clough, 1997). In turn, this means that attitudes are an appropriate target for violence prevention programs.

Media are believed to be potential contributors to the development of antisocial behavior in children. The link between exposure to violence on television and aggressive behavior, delinquency and later criminality has been thoroughly documented (as cited in Ledingham, Ledingham, & Richardson, 1993). One can identify several ways that media violence could affect social behavior. First, TV violence could provide the original
aggressive scripts which children store in memory. Secondly, TV violence might affect behavior by changing a person’s attitudes or emotional responses to violence. Thirdly, it may arouse a person, which in a short-term may have serious outcomes, for example, physical risk-taking (Potts, Doppler, & Hernandez, 1994). Educators and researchers are especially concerned with children and youth, because their attitudes, beliefs, ideas about the world, as well as social skills, are beginning to take form. Given the fact that children and youth are often exposed to media which “glorify” violence, and that the young viewers are still in very active developmental stages, it is reasonable to argue that there might be a relationship between extensive exposure to violent media and subsequent development of antisocial behavior.

Theories of Media-Induced Aggression

Over the years various theoretical perspectives and models for explaining and interpreting the complex interaction of variables and events that influence children’s television experience have been put forward. Among which there is observational learning theory, cognitive neoassociationist theory, cultivation theory, and the uses and gratification theory. Scholars attempted to apply these theories to explain the relationship between viewing TV violence and subsequent antisocial behavior.

According to the social cognitive theory of observational learning, the mere observation of aggressive filmed models leads children to imitate aggression (Bandura, Ross, & Ross, 1961, 1963a, 1963b; Bandura, 1994). The authors of the cognitive neoassociationist theory argue that children do not simply imitate the behavior they view, but they acquire aggressive behavioral scripts. According to this theory, aggression-
associated thoughts, emotions, and action tendencies are organized in networks.

Activation of one component in a network elicits related components (Berkowitz, 1984, 1986; Jo & Berkowitz, 1994). Cultivation theorists discuss mass media on the level of society and culture, not on the individual level, as the above theories do. The main idea of this theory is that viewers who are exposed to media messages for many hours gradually absorb them as a part of their worldviews and attitudes (Gerbner, Gross, Morgan, & Signorielli, 1980; 1986). A uses and gratifications theoretical perspective places more emphasis on a viewer’s characteristics and motivations. This model attempts to include the actual motivations of viewers, the uses they make of television, and the actual needs they have that are satisfied by the media. It looks at what people do with the media rather than what media do to them (McQuail, Blumler, & Brown, 1972; Rubin, 1986).

The review of the literature has revealed that none of the theoretical perspectives presented above can claim definitive knowledge of how learning of antisocial behavior from TV takes place, especially in real-life settings. It should be also mentioned that little research has been guided by each of the perspectives. That is why scholars tend to organize their reviews of the existing research on the basis of types of effects and not the theoretical perspective which explains the relationship between viewing TV violence and consequent social behavior (Potter, 1998; Van Evra, 1990). The present literature review is also organized according to the types of effects. TV violence may have an impact on viewers at a number of psychological levels, which can be broadly divided into affective, behavioral and cognitive (Gunter, 1994). Since the focus of the present research is on cognitive effects of media, they will be presented in more detail.
Emotional Effects of TV Violence

Television can produce emotional responses among viewers. They can be either weak or pronounced and either short-term or long-term. Television can trigger strong emotions such as fear, rage, and lust. Most emotional effects are short lived (Potter, 1998). However, long-term relationships have been observed between exposure to television violence over time and the cultivation of fearfulness of personal victimization (Cantor, 1994). Singer and Singer (1980) argued that horror movies could cause children to have sleeping disturbances and terrible nightmares a long time after viewing. This can be especially pronounced if children are exposed to content beyond their comprehension. More recently, Cantor and his colleagues examined age and developmental differences in children's responses to frightening media depictions. It has been found out that young children are frightened mostly by characters and events, which have threatening appearance. Older children are more frightened by stimuli that represent realistic and abstract threats, which are independent of visual depiction (Cantor & Wilson, 1984; Cantor & Reilly, 1982; Cantor & Sparks, 1984). Despite these developmental differences, children as well as adults have been shown to respond emotionally to violent content. All of the experimental research that has been conducted regarding fright reactions appears to have involved violent elements such as injury or physical danger (Gunter, 1994).

Behavioral Effects of TV Violence

Behavioral effects have received the greatest attention. Behavioral effects include catharsis, arousal, disinhibition and imitation.
Catharsis

According to the catharsis hypothesis, accumulated aggressive impulses can be harmlessly discharged either through fantasizing about violence or through watching fictional portrayals of violence, at least under controlled laboratory conditions (Feshbach, 1955, 1961). According to Feshbach and Singer (1971), some children, namely those who have strong aggressive tendencies, poor controls, and relatively low initial levels of fantasy aggression, can experience the catharsis effect while viewing television violence.

However, it is important to note that the catharsis hypothesis has not received much support. Some researchers suggested that the ability to discharge aggressive impulses in response to violent media content might be a dimension of human cognitive skill of not all but some individuals (Gunter, 1980).

Arousal

The arousal hypothesis suggests that observation of violence may facilitate the expression of aggression by causing an increase in autonomic arousal. Geen and Thomas (1986) suggested some processes as causes for the facilitation of aggression by increased arousal. For example, arousal produced by watching violence may raise one’s overall activity and make any responses more likely, including aggressive ones. There is research that confirms that watching violent programs cause higher heart rate and blood volume pulse amplitude in some children (Cline, Craft, & Courrier, 1973). Some experimental research also shows that watching screen violence can elicit aggressive thoughts and emotional arousal associated with it in young adults (Buchman & Geen, 1990).
There is some suggestion, however, that arousal disperses quickly. Moreover, a short delay between initial emotional arousal and an opportunity to respond aggressively can significantly reduce aggression (Doob & Climie, 1972).

**Disinhibition**

According to the disinhibition hypothesis, watching violence on the screen may legitimize the use of violence by the viewer in real life by undermining social sanctions against behaving violently that normally work to inhibit such behavior. According to Berkowitz (1984, 1986), aggressive scenes are accompanied by certain emotions and thoughts. People commit to memory these cue-feelings, cue-thoughts and cue-behaviors. Because, according to Berkowitz, aggressive feelings, thoughts and behaviors are all connected within the same associative pathways, activation of any one component would spread along the pathway to activate the other components. Whenever there are appropriate cues in the environment, for example similar situations as seen on the screen, emotional arousal and thoughts, which accompanied the aggressive scenes while viewing, may elicit aggressive behavior (Berkowitz, 1993). Durable effects of media exposure are proposed through two processes. First, people may continue to think about what was shown, and thus related networks of associations are repeatedly activated. Secondly, people may encounter reminders of the television show in a later situation (Jo & Berkowitz, 1994).

**Imitation**

This hypothesis assumes that viewers, especially children, are inclined to learn from behaviors they see performed by TV characters, and copy the actions themselves. Young viewers may copy their heroes’ behaviors to become more like them, through
psychological process known as identification (McBeth, 1996). Bandura’s pioneering research with a Bobo-doll (Bandura, Ross, & Ross, 1961, 1963a, 1963b) illustrated that the mere observation of aggressive filmed models led children to imitate aggression. Moreover, modeling occurred even when the children did not have the opportunity to perform the behavior or to receive reinforcement during the observation period. Only those children who had seen the aggressor punished did not engage in aggressive behavior following the viewing, while those who had not did.

Since Bandura’s research, there have been numerous experimental studies aimed at finding and confirming the link between viewing TV violence and aggressive behavior in children (Friedrich-Cofer & Huston, 1986; Josephson, 1987). These studies have consistently demonstrated that under well-controlled laboratory conditions the observation of violence causes children to behave more aggressively either towards inanimate objects or other children. It is worth mentioning that these effects go beyond the exact imitation of aggressive behavior of a televised model. Children often display aggressive behaviors that differ from the behaviors they observe in the film or the show (Geen & Thomas, 1986).

Cognitive Effects of TV Violence

At a cognitive level television may influence and shape viewers’ beliefs, attitudes and opinions about the world around them (Potter, 1998). Heavy viewers are expected to have distorted beliefs about events that are misinterpreted on television. Thus, the amount of viewing or exposure to TV is a very important variable in television impact on thoughts and beliefs (Van Evra, 1990).
A series of studies by Gerbner et al. (1980, 1986) show that portrayal of crime and violence on TV can have a major impact on public beliefs and concerns about crime. For example, the rate of violence and crime and the extent of threat and danger tend to be exaggerated by heavy TV viewers, which could produce excessive anxiety about personal safety. The Gerbner group found that heavy viewers exhibited higher estimates of likelihood of personal involvement in violence and great fear of being victims of crime. The researchers suggested that it might be that such viewers draw inferences from TV content and then generalized them to the real world (Gerbner et al., 1980, 1986). The research with children and adolescents also suggests that a more pronounced cultivation effect can be observed when parents are not involved in their children’s viewing or when children are not strongly integrated into supportive peer groups. In these situations, where parents or peers have minimal input or influence, television is more likely to have an effect (Gerbner et al., 1980).

It is also hypothesized that in the case when a viewer has little direct experience, such as in the expectation of violence, there are more chances to be impacted and, as a result, to treat aggression as a socially acceptable behavior (Van Evra, 1990). It should be mentioned, however, that there is little research addressing cognitive effects of media violence. There were only a few published studies that assessed attitudinal changes that might take place as a result of exposure to media violence. Dominick and Greenberg (1972) examined the interaction of exposure to television violence with children’s attitudes toward violence, within the context of family attitudes toward violence and the child’s social environment. Questionnaires were completed by 434 boys and 404 girls in the 4-6th grades. The researchers found that the greater the level of exposure to television
violence and the less defined the family attitudes toward violence, the more the child was willing to use violence, to suggest it as a solution to a conflict, and to perceive it as effective. It was concluded that for average children from average home environments, continued exposure to violence is positively related to acceptance of aggression as a mode of behavior.

Belson (1978) conducted a study that involved 1565 London boys in the age-range 12-17 years. The authors utilized a survey research design. Some of the hypotheses set in the study were: high exposure to television violence causes adolescents to accept violence as a way to solve problems, and exposure to television violence makes them more callous in relation to near or distant violence in the world around them. Data analysis showed that there was no meaningful support to any of these hypotheses.

Another closely related research to the topic under discussion is research on desensitization. According to the desensitization hypothesis, repeated viewing of TV violence leads to a reduction in emotional responsiveness to violence on the screen and to an increased acceptance of violence in real life (Gunter, 1994). This alarming aspect of television violence was discovered several years ago. However, just a few attempts have been made to provide practical demonstrations of a desensitization effect of TV violence on children. A series of four experiments were conducted by Ronald Drabman and Margaret Thomas in the mid-1970s to test the desensitization hypothesis (Drabman & Thomas, 1974a, 1974b, 1976; Thomas & Drabman, 1975). These studies looked at whether watching TV violence affected the response of the 8-year-olds who witnessed a real-life fight between two other children in a playroom. Results showed that children
who watched violent material were less likely to seek the help of an adult to stop the fight that they thought was taking place.

Several attempts have been made to replicate the Drabman and Thomas’ findings. Horton and Santogrossi (1978) conducted a study to investigate the possibility that an intervening variable could affect the period of time it would take children to seek adult intervention, which operationally defined degree of acceptance of others’ conflict and aggression. While viewing a violent clip, some child participants would receive adult criticism of violence on the screen (e.g. “How terrible... Shooting at that policeman is so disgusting”); others would get nonviolent alternatives from an adult (e.g. “There are other ways instead of shooting... Talking, or just giving himself up”); still other participants would be offered nonevaluative descriptions (e.g. “That policeman has a big rifle... That man has a small gun”). The results of the study indicated that children in the antiaggressive- and nonaggressive-commentary conditions were significantly less tolerant of the younger children’s aggression as compared to those in the neutral-commentary group. Although the results did suggest that adult commentary does reduce the impact of TV violence, the findings of Drabman and Thomas were not replicated. Moreover, the scores for the control group did not differ from those scores for any of the three treatment groups. Horton and Santogrossi (1978) concluded that inclusion of the adult commentary might have interfered with the impact of the violent content. It was also noted that the portrayals of human aggression that they used may have been less violent than the film excerpt used in the study by Drabman and Thomas.

Woodfield (1989) attempted to replicate the study of Drabman and Thomas using the contemporary film, Karate Kid. Similar to Horton and Santogrossi (1978) she did not
obtain statistically significant differences between the children who had watched violent and nonviolent materials. Woodfield interpreted her results as a toleration of conflict and aggression on a grand scale. Her interpretation was based on a belief that contemporary children are already so desensitized by having viewed years of strong TV and film violence that the additional increment presented in the Karate Kid material did not affect the participants.

Molitor and Hirsch (1994) conducted a study aimed at replicating the original Drabman and Thomas experimental procedures. The researchers involved the exact procedures used in the original study. Moreover, they even reconstructed with the help of Dr. Thomas the original videotaped depiction of two young children first playing and then fighting. This was done in an attempt to ensure that the research procedures were the same as used in the original study, and thus to test that the Drabman and Thomas' findings held even for children who were familiar with violent scenes. Forty-two fourth and fifth-grade boys and girls were randomly assigned to the treatment and control groups.

Data analysis showed that the difference median scores for the treatment and control group was statistically significant at the .01 alpha level. Thus, the Drabman and Thomas finding was found to be operant even for contemporary children who probably view larger amount of violence as compared to the child participants 18 years ago (due to the wide introduction of the VCR, cable etc.). The study by Molitor and Hirsch (1994) reaffirms that children tend to tolerate violence of others more if they have seen TV/film violence.
Intervening Variables in the Relationship between TV and Antisocial Behavior

The majority of the research on media violence and antisocial behavior presented above is experimental. It confirms that there is a causal relationship between watching TV violence and aggressive behavior, thoughts, and cognitions. However, there is a widely spread concern for the low ecological validity of laboratory studies. Experimental studies have been criticized that their artificial settings focus attention on the television content, and thus the impact might be more pronounced as compared to real-life situations (Friedrich-Cofer & Huston, 1986). To extend the understanding of the relationship between television violence and antisocial behavior in real-life, researchers attempted to conduct either longitudinal studies or, at least, take into account the viewer’s characteristics (e.g. age, gender, the predisposition towards aggression, and perceptions of televised violence), program characteristics (e.g. content, production techniques, program schedule), and also environmental variables (e.g. peer relationships, cues for aggression, family environment, and viewing contexts) (Dorr, 1986). Some of these intervening variables will be discussed below.

Developmental Level

One of the dangers of viewing TV by young children is their lack of ability to understand actions, motives and consequences of violent actions (Van Evra, 1990). This often leads to the situation that young children imitate aggression and treat it as a socially-accepted problem-solving technique because they do not understand the consequences of that behavior as well as older children and adults do. Researchers
studied developmental differences to a television character’s appearance and behavior. For example, in the experimental study by Hoffner and Cantor (1985) children at three age levels (3-5; 6-7; 9-10) viewed a videotape in which the protagonist’s appearance (attractive, ugly) was factorially varied with her behavior (kind, cruel). They hypothesized, based on theoretical and empirical evidence, that there would be a developmental decrease in perceptual dependence. The influence of the character’s appearance was expected to decrease with age, and the influence of the character’s behavior was expected to increase with age. These expectations were confirmed. As a result, many researchers suggested that there is a critical or sensitive period during which TV violence has a maximal effect. However, there are disagreements as far as the age range of the critical period is concerned. A three-year longitudinal study by Eron, Huesmann, Brice, Fischer, and Mermelstein (1983) confirms the notion of a sensitive period at around age 8 or 9. However, other researchers gave evidence of age 10 to 12 to be a critical time (as cited in Van Evra, 1990).

Gender Differences

It is suggested that boys and girls would be affected differently by the violent media they watch. None of the experimental research, which was found for the present review, indicated that there were gender different reactions as a result of exposure to TV violence and subsequent antisocial behavior in children, adolescents or adults. As a result of a longitudinal research, Eron (1980) found that a significant positive relation between the viewing of TV violence and subsequent aggressive behavior was true only for boys. For girls, the effect was either non-significant or tended to go in the opposite direction.
Several explanations of that result were given. First, the gender of the TV character could be a hallmark in imitation and identification with a TV character. In the 1980s Huesmann and his colleagues studied children longitudinally in the following countries: the USA, Poland, Finland, Israel and Australia. Their results showed that girls in Israel were less aggressive in the long-term as compared to girls from other countries. Analysis of Israel TV programs content revealed that at that time there were few female characters in violent films and shows. This might be a good explanation for the gender difference findings because the same researchers also found that for boys the effect was exacerbated by the degree to which the boy identified with TV characters. It is interesting that if for some girls a significant relation between TV violence and aggressive behavior was traced, those girls were found to prefer boys’ activities (Huesmann, Lagerspetz, & Eron, 1980). Another explanation of a weak TV violence-aggression relationship for girls was given by Lytton and Romney (1991). These researchers argue that females are as susceptible to aggressive models and violence in mass media as males, but it is possible that societal attitudes are more accepting of aggression of boys, and that boys are more impulsive and less self-regulating of their behavior than are girls.

**Perception of Televised Violence**

Television realism appears to be a very important consideration in the relationship between viewing violence and acquiring of the antisocial behavior and attitudes. Researchers state that cartoons, films and shows with elements of aggression are less likely to have an effect, if they are perceived as unreal. On the other hand, if the viewer perceives the violent TV display as realistic, this will facilitate the establishment,
maintenance, and retrieval of aggressive scripts, and will trigger aggressive thoughts and feelings (Berkowitz, 1986). This finding may point to one of the major reasons why many people may be unaffected by scenes of violence on television screens. Moreover, this suggests if children could be taught to discriminate between reality and fantasy of TV violence, the development of subsequent antisocial behavior may be alleviated. It is interesting, that Huemann and Eron were working with groups of children in their longitudinal study to determine the best way to ameliorate the TV violence-aggression relation. They taught children during one year to distinguish between the fantasy and reality aspects of TV shows, but on a criterion test these children did not distinguish fantasy from reality any better than a control group of children (Eron, 1980). However, Huesmann et al. (1980) found that children’ perceptions of television violence as realism declines significantly with age. With age, another important variable comes into the play: identification with TV characters. Eron (1982) summarized and integrated the results of two large-scale longitudinal studies, which involved subjects from the USA, Finland and Australia. It was found that those subjects who had higher self-rated identification with TV characters had higher peer-nominated aggression scores.

Focus of Attention

Another reason why people might not display subsequent antisocial behavior after long exposure to TV violence is that they do not concentrate on the aggressive aspects of the programs or they cannot form mental representations because the material is either not salient or it is too complex to be remembered. This can lessen aggression-enhancing effects of the violent scenes in the long-term outcome. It is not well researched, however,
why some children do pay attention to violent scenes while others do not. To find out the reasons, some scholars studied certain programs’ characteristics and its relationships to children’s retention and recall. The results show that preschool children attend more closely to visual than to auditory features while watching TV programs and they emphasize actions (Hayes & Birnbaum, 1980; van der Broek, Lorch, & Thurlow, 1996). Moreover, when the experimenter views a TV program with children and stops the program to present a summary up to 3 times during the show, recall performance is facilitated (Watkins, Calvert, Huston-Stein, & Wright, 1980). More research found that child viewers showed enhanced looking at the TV screen in the presence of child and non-human TV characters cuts, animation and movements, and they showed depressed looking in the presence of men TV characters. Older children and adults showed the same patterns with the exception that adults did not show depressed looking at adult male TV characters (Schmitt, Anderson, & Collins, 1999).

**Family Environment**

Parents can provide the most enduring influence of all adults on children. Parents can determine how much and what type of television their children watch. Moreover, family attitudes toward aggression also constitute a critical variable in television’s impact. There are studies that have indicated that parents use direct interventions to prevent children from watching programs with inappropriate content. However, as research shows “inappropriate” content for many parents constitute horror shows and soap operas, but not crime shows, cartoons and superhero shows (St. Peters, Fitch, Huston, Wright, & Eakins, 1991). St.Peters et al. (1991) also discovered that the type of
the program that children and their parents watched together was strongly related to adult preferences not that of children. These researchers suggested children’s gradual socialization into sharing their parents’ program preferences, and thus children are potentially exposed to violence in crime shows as a result of parental choices.

Another piece of research states that there is a strong link between family stress and TV viewing patterns. Henggler, Cohen and Edwards (1991) found that high rates of television viewing are linked with problematic family contexts. The children from problematic family contexts tend to spend more hours watching TV as compared to children from non-problematic family contexts. The researchers argue that high TV viewing may represent a relatively positive coping strategy for children in stressful family contexts. According to Henggler et al. (1991), to modify children’s viewing habits one needs to address aspects of the family context that is difficult to ameliorate.

To understand the full context of how aggressive a child can become as a result of TV violence exposure, it may be necessary to address not only whether a parent controls the child’s TV viewing, but also what the parent does in other interactions with the child. For example, whether or not parents discuss TV programs with their children may be part of a general child-rearing approach and family environment style. Some researchers suggested that those parents who view television programs with their children and who discuss the content of the programs are more likely to help children understand that prosocial lessons should be learned from TV (Primavera, Herron, & Jauier, 1996). The role of family context seems to be the following: the more control the family exerts regarding the child’s viewing patterns and the more discussion is involved, the less chances will be that TV violence will have a strong link to subsequent development of antisocial
behavior. Singer and Singer (1986) found that the less aggressive children came from homes in which there was less TV viewing during the preschool years, television was less likely to be valued as a source of recreation, parents established television viewing rules, and parents used less power-assertive punishment.

As far as adolescents are concerned, the results in terms of viewing media violence, development of aggressive behavior and family context are contradictory. On the one hand, the research shows that the family hardly exerts any control over the media use by adolescents, which leads to the situation that adolescents are extensively exposed to socially disvalued media including action movies with high rate of violent scenes (Roe, 1995). On the other hand, some research gives evidence that up to 65% of the total viewing time is spent by adolescents watching television with another family member, either mother, father or siblings (Lawrence, Tasker, Daly, Orhiel, & Wozniak, 1986). Lawrence et al. (1986) suggest that adolescents’ viewing TV programs takes place under moderating influence of other family members. Although the research on adolescent media use did not investigate the causal link between watching TV or video violence and aggressive behavior, in general, the researchers found out that adolescent TV and video violence “fans” tend to be males and come from lower socioeconomic status background. In addition, they often have distanced relationships with their parents and are more likely to experience severe difficulties at school (Roe, 1995). To sum up, the role of family environment should not be underestimated in determining the link between TV violence exposure and the development of subsequent antisocial behavior.
Computer and Video Games

Today, media psychologists and educators are asked as often about effects of video and computer games as about children's television habits. There has, unfortunately, been much less research in this field (McBeth, 1996).

The major areas of concern include the ability of video games to trigger epileptic seizures, a phenomenon which is acknowledged to be real but is of unknown prevalence (Graf, Chatrian, Glass, & Knaus, 1994; Maeda, Kurokawa, Sahamota, Kitamoto, Veda, & Tashima, 1990); the displacement of other activities, including school work (Strasburger, & Donnerstein, 1999); the influence of frequent video game playing on emotional and social life (Sakamoto, 1994); development of aggression (Cooper & Mackie, 1986; Schutte, Malouff, & Post-Gorden, 1988).

The main concerns are focused particularly on violent video and computer games, and as the research shows, violence is a major theme of the most popular video and computer games. Moreover, adolescents are primary consumers of video and computer games (Funk & Buchman, 1996). In addition, recent surveys show that with regards to the favorite games, males prefer the more violent and challenging games whereas females prefer those with identifiable fun characteristics and intellectual games. Furthermore, some of the players like their favorite game because of its violent content (Griffiths & Hunt, 1995).

To determine relationships between video game playing and aggressive behavior, models from research on the effects of television have been applied. This has been done on the assumption that acts of aggression depicted in games are often similar to televised aggressive acts which have been empirically demonstrated to lead to aggression in
children (Griffiths, 1991). Television and video/computer games both employ special sound and visual effects to accompany aggressive acts, both use color and animation, both may use an actor or a character that may serve as a model for aggressive behavior (Irwin & Gross, 1995). Unlike television, however, video and computer games require more visual attention and active involvement. These two factors are hypothesized to enhance the impact of video aggression on children's behavior (Greenfield, 1984).

The general pattern of finding is that playing violent video games increases the likelihood of subsequent aggressive behavior (Funk, 1992). Several studies compared children's behavior after aggressive and nonaggressive video game play. For example, Ballard and Wiest (1996) found a relationship between playing violent video game and subsequent aggressive behavior in males. Moreover, the more violence was contained in a video game, the greater was the potential for negative outcomes, such as aggressive behavior. Silvern and Williamson (1987) demonstrated increased aggression and decreased prosocial behavior in four- to six-year-olds after violent video game play. Dill (1997) hypothesized that violent video game play would be related to increases in aggressive behavior, thoughts and feelings, and world-view in a college student sample. Results showed the predicted relationship. However, these effects were moderated by individual differences in aggression and by sex. Cooper and Mackie (1986) examined the effects of playing an aggressive or nonaggressive video game on fifth-graders free play. The researchers found that girls evidenced significantly more general activity and aggressive free play after playing the aggressive video game. Neither video game had any significant effect on boys' free play. In contrast to the above mentioned findings, Scott
(1995), for example, found no support for the commonly held view that playing aggressive computer games causes an individual to feel or behave more aggressive.

Related research suggests that exposure to media violence may also affect attitudes. According to some researchers, this might be particularly important today when video and computer games are much more violent than the 1980s versions (Funk & Buchman, 1995). Research shows that most of the computer and game players express one and the same theme as their attraction to playing: the sense of being in control in a society where such feelings are rare in everyday life. It should be mentioned, however, that this sense of limitless choice is largely illusory because the range of possible moves and their outcome of each is predetermined (Gailey, 1993).

Research shows that the games of the 1990s contain a lot of human-directed violence (Funk, 1992). Playing games involving repeated violence directed against human figures may have more lasting impact than destroying cartoon characters or inanimate objects (Funk & Buchman, 1995). If one considers violence as primarily a learned behavior (Berkowitz, 1993), then the combination of active involvement, reward and practice directed against human characters creates an ideal instrumental environment, in which violence is obligatory, easily justified, fun and without any negative consequences (Buchman & Funk, 1996). The negative impact of violent games might be enhanced due to the player’s ability to magically return a character to life by pressing a button to ‘continue.’ For children, erasing the link between violence and its consequences may be particularly important, especially as games become more realistic (Funk & Buchman, 1995). As a result, violence might be integrated into the child’s conception of and expectations about reality. Attitudes may be affected, resulting in decreased empathy.
for victims of violence, and in treating violence as a useful problem-solving technique (Anders, 1999; Funk & Buchman, 1995).

It should be noted, however, that little is known about the possible behavioral and attitudinal long-term effects of playing violent video games (Griffiths, 1991). Moreover, attitudinal changes have been only theoretically predicted. Thus, systematic work is needed to evaluate developmental trends and to observe behavior in naturalistic settings (Funk, 1992).

Summary

The literature review shows that, although a lot of research has been conducted in the field of media violence, some areas were studied more extensively than others. For example, behavioral consequences of exposure to TV violence received more attention than cognitive and affective effects. This necessitates conducting additional research in the area of cognitive and affective effects of media violence. Since the introduction of VCRs and numerous cable and pay channels, exposure to passive media violence has increased.

As reviewed in the present chapter, many intervening variables come into play when exploring effects of violent media on young people. Among them are developmental level, gender differences, perceptions of televised violence, focus of attention, family environment and others. Since there are time limitations for the present study, it is impossible to take into account all these variables. Therefore, it has been decided to consider only perception of televised reality and family involvement with media entertainment habits. These variables are argued to be of particular importance (Gunter, 1988).
The review of the literature has also shown that the research is limited in the field of interactive media entertainment. Thus, the hypothesis that violent video and computer games shape youth’s attitudes needs further investigation. The present study will contribute to knowledge by investigating the cognitive effects (attitudinal) of exposure to violence in both passive and interactive media.
CHAPTER 3

METHODOLOGY

Overview

The present chapter addresses the choice of the sample, the instruments used for data collection, the pilot study, the data collection procedure, and the procedure for data analysis.

A quantitative approach was used in the present study. Literature review showed that this approach is widely used in the field of research on media and their effects. Moreover, a quantitative research design is relevant to the purpose of the present study: to compare and predict violence-related attitudes among adolescent boys on the basis of their exposure to media violence. In details, the study utilized a survey research design that allowed including a large sample, while considering several intervening variables.

Sample

The sample consisted of 203 boys, ranging in age from 13 to 16, from grades 7 to 11. The decision to target males can be explained by the fact that adolescent boys are the main audience of action movies with high levels of violence (Roe, 1995). They are also the most frequent video/computer game players (Griffiths, 1991). In addition, as the surveys show, boys are more likely to choose games with fantasy and human violence as their favorite (Buchman & Funk, 1996). Since the present study is aimed at assessing youth attitudes toward violence on the basis of exposure to media violence, this choice is justified.
The participants were recruited from two schools on Vancouver Island: a junior high school and a secondary school. To avoid selection bias, the participants were chosen from classes that were required for all students: Career and Professional Planning (CAPP) and English Grade 9. The sample had different ethnic compositions (see Chapter 4).

Instrumentation

The data were collected using four instruments: the Demographic Questionnaire, the Media Entertainment Habits Questionnaire, the Attitudes and Beliefs regarding Aggression Scale (Vernberg, Jacobs, & Hershberger, 1999), and the Perception of Movie Reality Scale (Greenberg, Linsangan, & Soderman, 1993). The instruments are described below.

The Demographic Questionnaire

The Demographic Questionnaire was developed by the researcher to gain information about age, race, and family structure of the participants. This information was collected with the purpose of forming a profile of the participants within the study (Appendix 1).

The Media Entertainment Habits Questionnaire

The Media Entertainment Habits Questionnaire was developed to assess movie-viewing and video/computer game-playing habits (Appendix 2). Assessment was based on adolescent boys’ self-reports of the average number of TV movies and videocassette movies they watched per week, the average number of theatre movies they watched per month, and the average amount of hours per week they spent playing video/computer games.
Participants were also asked to choose three of the movie genres they preferred watching and three of their current favorite movies. Movie ratings were used to determine a level of violence in the movies reported by the participants (see Chapter 4). In addition, the participants were asked to name three of their favorite computer/video games. As with movies, ratings were used to determine the level of violence in the games reported by the participants.

The Media Entertainment Questionnaire also included questions about parental involvement with their adolescents' media entertainment habits, both with movie-viewing habits and game-playing habits. On the basis of the information obtained from the Media Entertainment Habits Questionnaire, participants were assigned to the following groups: those with high exposure to movie violence versus those with low exposure to movie violence, those whose games contained higher level of violence versus those whose games contained little or no violence, those whose parents showed high involvement with movie-viewing habits versus those whose parents showed little or no involvement, and, finally, those whose parents exerted more control over game-playing habits versus those whose parents showed little or no control (see Chapter 4).

Attitudes and Beliefs Regarding Aggression Scale

The Attitudes and Beliefs regarding Aggression Scale (ABRA Scale) was developed by Vernberg et al. (1999) to assess youth attitudes regarding aggression. Based on their studies, Vernberg et al. (1999) reported that the questionnaire was an efficient tool for research with youth populations. The internal consistency of the scale as determined by Cronbach's alpha was .88 for the Aggression Legitimate and Warranted factor (the Aggression Legitimate subscale), .72 for the Aggression Enhances Power and
Status factor (Aggression Pays subscale), and .68 for the One Should Not Intervene in Fights factor (the Stay Out subscale). The subscales' intercorrelations varied: the correlation between Aggression Legitimate and Stay Out subscales was .47 (p < .001), between Aggression Legitimate and Aggression Pays .42 (p < .001), and between Aggression Pays and Stay Out .14 (p < .001).

When published in 1999, the ABRA scale consisted of 16 items (Vernberg et al., 1999). However, correspondence with Dr. Vernberg's graduate student (B.K. Biggs, personal communication, October 2, 2000) revealed that an additional item was added to the Stay Out subscale of the instrument. The revised version of the ABRA scale was used for the present study. The revised version consisted of 17 items (Appendix 4). Each item represented a statement related to some aspect of violence. The response format was on a 4-point Likert-type scale ranging from 1 (do not agree at all) to 2 (agree a little) to 3 (agree a lot) to 4 (completely agree). The scores for the two items in the Stay Out subscale that involved anti-violence statements were reverse so that higher scores indicate attitudes favorable toward violence.

The respondents were asked to indicate their beliefs about each item by circling one number of the scale (1, 2, 3, 4) following the item. The data were scored by adding together all the numbers that were circled by the respondents for each subscale. Given 8 items retained in the Aggression Legitimate subscale, the possible range scores was from 8 to 32; given 5 items retained in the Aggression Pays subscale, the range was from 5 to 20; and given 4 items retained in the Stay Out subscale, the range was from 4 to 16. When the scores on the above subscales were reported, they represented the average of the items comprising each scale (Vernberg et al., 1999).
As mentioned above, the ABRA scale consisted of three subscales:

1. The *Aggression Legitimate* subscale consisted of 8 items which expressed the belief that violent problem solving was legitimate and warranted (e.g. agreeing with the statement “Sometimes a student deserves to be pushed around by other students”).

2. The *Aggression Pays* subscale consisted of 5 items which measured the belief about aggression as a way to enhance a sense of personal power and status (e.g. agreeing with the statement “Students can make other students do what they want by yelling at them”).

3. The *Stay Out* subscale was comprised of 4 items that assessed whether the respondent had a hands-off attitude about helping victimized peers (e.g. disagreeing with the statement “When a student is getting picked on, other students should try to stop it”).

Since no published reports of reliabilities were found for the revised instrument, a principal components analysis was performed to identify factors comprising the ABRA scale, as well as internal consistency and subscales’ intercorrelations. The results of this analysis will be presented in Chapter 4.

**Perception of Movie Reality Scale**

The Perception of Movie Reality Scale (PMR) was developed by the investigator on the basis of a similar scale developed by Greenberg et al. (1996). The original scale measured respondents’ perception of how real different content elements were on television, while the revised questionnaire focused only on movies’ content and measured perception of movie reality (Appendix 3).
Thus, the original scale was slightly reworded: “TV character(s)” were changed into “movie character(s),” and “favorite TV program(s)” into “favorite movie(s).” This was done to ensure that the adolescents completed the scale with the emphasis on the movie reality instead of television reality in general. In addition, the meaning of each question starting with “how real” and “how real to life” was explained in the Instructions section. The participants were instructed to give their opinion whether movie characters, the problems movie characters had, and the way they solved those problems were similar to people, problems and situations experienced in the participants’ lives, their friends’ lives or in the lives of the people they knew.

Similar to the Perception of Television Reality Scale, the revised instrument measured perceptions of movie reality in general (items 1-3), the reality of their favorite movies (items 4-6), and their favorite movie characters (7-10). The responses ranged from 0 (not real at all) to 10 (very real).

The participants were instructed to indicate their responses by circling one of the numbers next to each item on a continuum ranging from 0 to 10. The scores were reported as an average of the items comprising the scale, with lower scores indicating perception of movie reality as fiction, and with higher scores indicating perception of movie reality as real.

A pilot study of the revised instrument took place before actual data collection. The procedure for the pilot study is described below.
Pilot Study

As mentioned above, the Perception of Movie Reality Scale was developed by the researcher on the basis of a similar scale. To investigate the factor structure and internal consistency of the instrument, a pilot study took place in September 2000.

One hundred high school students from non-participating schools, all meeting the requirements of the participant group, were selected for a pilot study. Out of 100 distributed questionnaires, 87 were complete. These 87 cases underwent a principal components analysis. The results of the analysis will be presented in Chapter 4 (Preliminary Results).

In addition, another pilot study was conducted two weeks before the data collection to allow for changes in the whole questionnaire booklet (the Demographic Questionnaire, the Media Entertainment Habits Questionnaire, the PMR Scale, and the ABRA Scale). This was done both to assess whether or not the questions and the instructions were clear and also to estimate the amount of time necessary for the participants to complete the booklet. Four adolescent boys, each representing a 13-, 14-, 15-, and a 16-year old, were recruited for this pilot study. It took from 20 to 25 minutes for the pilot-study participants to complete the whole questionnaire booklet. The discussion, following the completion of the booklet, showed that the content of the questionnaires as well as instructions were comprehensible to the participants. Thus, the investigator made no further changes.

Data Collection

After obtaining Ethical Approval from the University of Victoria, permission for conducting the research was obtained from principals of the schools and superintendents
of the school districts. As mentioned above, permission to conduct research was obtained from two schools. The researcher visited the two participating schools about three weeks before the data collection. The principals of the schools arranged to gather the 13-16 year old boys in the school theatre for this presentation. The researcher introduced herself and the topic of the study; informed the boys that participation was completely voluntary, anonymous, and confidential; and encouraged the adolescents to ask questions if they had any. The boys in both schools posed several questions. In general, the boys were interested in where participation would take place, and if there would be any rewards for participation.

Those boys who showed interest in the research topic and were willing to participate in the study received two copies of an informed consent form: one to be signed and left with the participant, and the other signed and to be returned to the researcher (Appendix 5). The boys who agreed to participate and signed a Participant Consent Form also received a letter addressed to parents/guardians which informed parent(s)/guardian(s) of their sons' decision to take part in the study (Appendix 6). Parents/guardians were asked to sign the form and send it with their child back to school if and only if they did not want their child to participate. Otherwise, they were considered to be informed. None of the parents/guardians returned the form indicating objection to their child's participation. However, the researcher received two telephone calls, from a parent and a guardian, confirming that they wanted their children to participate, and approving of this study.

Participation took place in Career and Professional Planning classes, and in English Grade 9 classes, under the name of media awareness classes. A regular classroom
teacher administered the survey. Before administering the questionnaires, each teacher received written guidelines from the researcher. It took from 18 to 25 minutes for the participants to complete the questionnaires. Following the completion of the measures, the teachers collected the survey booklets and submitted them to the school office. The researcher picked up the completed questionnaires from the principals.

Procedure for Data Analysis

Data were analyzed using SYSTAT 9.0. Descriptive statistics such as means, standard deviations, and distributions were used to describe the basic features of the data. Data analyses for specific research questions are described below.

To answer the first research question, *What are the media entertainment habits of adolescent boys aged 13-16?,* descriptive statistics were employed. Median splits were also used to divide participants into groups of viewers and players. Median splits are widely used in the field of media research as well as in studying attitudes (Dominick & Greenberg, 1972; Vernberg, Jacobs, & Hershberger, 1999).

To answer the second research question, *What are the attitudes and beliefs of adolescent boys regarding aggression?,* descriptive statistics were employed. The subscales of the ABRA scale were analyzed separately because each of the subscales represented a different dimension of attitudes toward violence.

To answer the third research question, *Are there differences in attitudes and beliefs regarding aggression between heavy and light viewers of movie violence?,* a three-way analysis of variance was employed. Differences in attitudes toward violence between heavy and light viewers of violence were analyzed in conjunction with
perception of movie reality and parental involvement with an adolescent’s movie-viewing habits. As before, each of the ABRA subscales was analyzed separately.

To answer the fourth research question, *Are there differences in attitudes about aggression between those who play “violent” and those who play “non-violent” video/computer games?*, a series of two-sample t-tests was employed. As in the two previous analyses, each of the subscales of the ABRA scale was analyzed separately.

To answer the fifth research question, *How well do media entertainment habits, perception of movie reality, and parental involvement with media entertainment habits predict adolescent boys’ attitudes about aggression?*, a complete standard multiple regression analysis was performed on the data, separate for each of the subscales.
CHAPTER 4

RESULTS

Overview

The present chapter consists of two parts which will report the results of the study. The first part presents preliminary results such as response rate, sample characteristics, and the reliability of the instruments used in the study. The second part includes the main results, which will respond to the research questions stated in Chapter 1.

Preliminary Results

Response Rate

Three hundred questionnaires were distributed to adolescent boys aged 13-16. Table 1 presents the response rate from these 300 questionnaires.

Table 1

<table>
<thead>
<tr>
<th>Number of questionnaires</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>distributed</td>
<td>300</td>
</tr>
<tr>
<td>returned</td>
<td>250</td>
</tr>
<tr>
<td>valid responses</td>
<td>203</td>
</tr>
<tr>
<td>return rate in %</td>
<td>83.3</td>
</tr>
<tr>
<td>effective response rate</td>
<td>67.7</td>
</tr>
</tbody>
</table>

Out of 300 distributed questionnaires, 250 were returned. Due to incomplete information, 47 questionnaires were eliminated from the analysis. Therefore, 203 questionnaires were used in this analysis. Both the return rate and the effective response rate were relatively high: 83.3% and 67.7% respectively. The explanation for the satisfactory return rate could be that the administration and teaching personnel of the
participating schools showed interest and involvement in the research topic and in problems of violence in general. Thus, the researcher found assistance, in the process of data collection, from the administration, teachers and participants.

Sample Characteristics

Several demographic variables, such as age, race of the respondents, and family structure, have been included in the questionnaire. This information was included to give some description of the population used in the present research. Percentage values are provided below.

Age

The age of the respondents ranged from 13 to 16, with 36% aged 13, 27.1% aged 14, 16.7% aged 15, and 20.2% aged 16. The mean age of the participants was 14.2 (SD = 1.1), with a median value of 14.0.

Ethnicity

The sample represented different ethnic origins. The ethnic composition of the sample was 69.5% Caucasian, 7.9% Indo-Canadian/other Asian Canadian, 5.9% First Nations, 2.5% Hispanic Canadian, and 8.4% of some other ethnic group (mostly mixed race). 3.9% of the sample did not report their ethnic origin.

Family Structure

The respondents were asked to report their current family structure, defined as the adults they live with. The results revealed that 57.6% of the sample live with both biological parents, 20.2% live with one biological parent and one other adult, 13.8% live with one biological parent only, 1.5% live with two adults who are not biological parents,
3% live with one adult who is not a biological parent, and 3.9% fall into the category of “other” (mostly brothers/sisters or non-reported).

Reliability of the Instruments

Several measures were used in the present study. They included the Attitudes and Beliefs Regarding Aggression Scale (Vernberg et al., 1999), the Perception of Movie Reality Scale (developed by the investigator on the basis of a similar scale by Greenberg et al., 1996), a Parental Movie Mediation Index, and a Limits on Game Playing Index.

Reliabilities of the instruments developed by the researchers from the USA were reported in Chapter 3. However, all four of the scales underwent a principal components analysis to identify the subscales comprising the instruments because some of the instruments used in this study were either developed or revised by the investigator. A Cronbach’s Coefficient Alpha, as well as subscale intercorrelations, was used to estimate the internal consistency of the instruments used in the present study. The results are presented below, separately for each scale.

The Attitudes and Beliefs Regarding Aggression Scale (ABRA)

As reported in Chapter 3, the ABRA scale was developed by Vernberg et al. (1999). The scale consisted of 3 subscales. Cronbach’s Alpha of the subscales, as well as intercorrelations between the subscales, is presented in the Methodology section. To the best of the investigator’s knowledge, the scale was tested only with the American population, and it is considered worthwhile to report the reliability of the instrument used with the Canadian population.
In addition, when published in 1999, the ABRA scale consisted of 16 items (Vernberg et al., 1999). However, correspondence with Dr. Vernberg’s graduate student (B.K. Biggs, personal communication, October 2, 2000) revealed that an additional item was added to the Stay Out subscale of the instrument. No published reports of reliabilities were found for the revised instrument. Therefore, a principal components analysis was performed on the data for the present study to identify factors comprising the ABRA scale.

After the data were collected for this study, a scree plot was used to determine the optimal number of factors, and extracted factors were rotated to several solutions. The following criteria were used to determine optimal factor composition: eigenvalues greater than 1, primary loadings more than .30, more than three items per factor and clear interpretability of factors. Three large factors emerged, and together accounted for 54.9% of the variance. All the possible rotations available in SYSTAT 9, such as VARIMAX, EQUAMAX, QUARTIMAX, ORTHOMAX, and OBLIMIN, showed that 17 items loaded cleanly on three factors which had been identified by Vernberg et al. (1999). In the non-rotated solution, the factor loadings varied from .59 to .76 for Subscale 1 (Aggression Legitimate), from .42 to .64 for Subscale 2 (Aggression Pays), and from .30 to .37 for Subscale 3 (Stay Out).

The results of the analysis (Table 2), performed on the data for the present study, showed that Cronbach’s alpha was .86 for the Aggression Legitimate factor (Subscale 1; eight items), .78 for the Aggression Pays factor (Subscale 2; five items), and .72 for the Stay Out factor (Subscale 3; four items). The three subscales varied in their intercorrelations. The correlation between Aggression Legitimate and Stay Out subscales
was the highest \((r = .59)\), the correlation between *Aggression Legitimate* and *Aggression Pays* was the second highest \((r = .45)\), and the correlation between *Aggression Pays* and *Stay Out* was the weakest \((r = .21)\). It should be mentioned, however, that the latter intercorrelation was higher than reported by Vernberg et al. (1999). This new result could be explained by an additional item introduced to the *Stay Out* subscale.

The results indicated a satisfactory level of internal consistency for the whole scale (Cronbach’s alpha was .88). Table 2 and Table 3 present a comparison of the internal consistencies and subscale intercorrelations between the original 16-item ABRA scale (for reliability see Chapter 3) and the present 17-item ABRA scale.

Table 2

*Cronbach’s Alpha of the ABRA Versions*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
<th>U.S. Data</th>
<th>Canadian Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>16-item version,</td>
<td>17-item version,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(N = 1,033)</td>
<td>(N = 203)</td>
</tr>
<tr>
<td><em>Aggression Legitimate</em></td>
<td>8</td>
<td>0.88</td>
<td>0.86</td>
</tr>
<tr>
<td><em>Aggression Pays</em></td>
<td>5</td>
<td>0.72</td>
<td>0.78</td>
</tr>
<tr>
<td><em>Stay Out</em></td>
<td>3/4</td>
<td>0.68</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16/17</td>
<td>n/a</td>
<td>0.88</td>
</tr>
</tbody>
</table>

*Note:* n/a - not available.

Table 3

*Subscales Intercorrelations of the ABRA Versions*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>U.S. Data</th>
<th>Canadian Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16-item version,</td>
<td>17-item version,</td>
</tr>
<tr>
<td></td>
<td>(N = 1,033)</td>
<td>(N = 203)</td>
</tr>
<tr>
<td><em>Aggression Legitimate</em>Stay Out</td>
<td>0.47</td>
<td>0.59</td>
</tr>
<tr>
<td><em>Aggression Legitimate</em>Aggression Pays</td>
<td>0.42</td>
<td>0.45</td>
</tr>
<tr>
<td><em>Aggression Pays</em>Stay Out *</td>
<td>0.14</td>
<td>0.21</td>
</tr>
</tbody>
</table>
To conclude, the results of the study indicated that the ABRA scale is an internally consistent measure of attitudes and beliefs regarding aggression of adolescent boys' from different demographic backgrounds. The scale can be used for studying attitudes toward violence as a unidimensional construct (measured by total score) as well as a multidimensional construct. The first was supported by a high Cronbach's value for the whole scale (.88), and by relatively high loadings of all items on the biggest eigenvalue of 6.0, as revealed by a principal components analysis. The latter was supported by the investigation of the instrument’s factor structure, which determined a three-factor solution, regardless of rotation used, and which matched the original instrument's configuration. According to Tabachnik & Fidell (1996), if different methods of rotation tend to give similar results, then the pattern of correlations in the data is fairly stable.

The Perception of Movie Reality Scale (PMR)

The Perception of Movie Reality Scale (PMR) consists of 10 items, and it was developed by the investigator on the basis of a similar scale developed by Greenberg et al. (1996). The original scale measured respondents' perception of how real different content elements were on television, while the revised questionnaire focused only on movies' content and measured perception of movie reality. For description of both instruments see Chapter 3.

The PMR scale was piloted with 100 adolescent boys one month before actual data collection. Seventeen cases were deleted from the analysis since they were not complete. The remaining 83 cases underwent a principal component analysis to identify
the factors comprising the PMR Scale. Several criteria were used to determine optimal factor composition: eigenvalues more than 1.0, primary loadings more than .30, at least three items per factor and clear interpretability of factors. The analysis showed that 10 items cleanly loaded on two factors, either non-rotated or rotated to any of the following solutions: VARIMAX, EQUAMAX, QUARTIMAX, ORTHOMAX, and OBLIMIN. These two factors accounted for 75.3% of the variance. Based on the content of the items, the factors were labeled (1) Movie Reality in General (three items; Cronbach’s $\alpha = .72$) and (2) Reality of Favorite Movies and Characters (seven items; Cronbach’s $\alpha = .96$).

The instrument also showed a highly satisfactory internal consistency. Cronbach’s alpha on 10 items was .93. The intercorrelation between the two subscales was .45.

After the data for the main study were collected, a principal components analysis was run again. The same criteria as in the case of the pilot study were used to determine the optimal solution. Principal components analysis with VARIMAX, EQUAMAX, QUARTIMAX, ORTHOMAX, and OBLIMIN rotations indicated two large factors with no cross-loadings, which together accounted for 74.9% of variance. In non-rotated solution, the factor loadings varied from .46 to .70 for the first factor, and from .78 to .90 for the second factor. The emerged factors coincided with those identified in the pilot study: items 1-3 were labeled Movie Reality in General, and items 4-10 Reality of Favorite Movies and Characters.

The results showed that Cronbach’s alpha was .78 for Movie Reality in General (Subscale 1; 3 items), and .95 for Reality of Favorite Movies and Characters (Subscale 2; 7 items). The intercorrelation between the two subscales was .48. The results also indicated a highly satisfactory level of internal consistency for the whole 10-item scale.
(Cronbach's alpha was .93). Comparison of internal consistencies and subscales intercorrelation between the pilot study data and actual data are presented in Table 4.

Table 4

Cronbach's Alpha and Subscales Intercorrelation of the PMR Scale

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Number of items</th>
<th>Pilot study, $N = 83$</th>
<th>Main study, $N = 203$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's alpha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subscale 1</td>
<td>3</td>
<td>0.72</td>
<td>0.78</td>
</tr>
<tr>
<td>Subscale 2</td>
<td>7</td>
<td>0.96</td>
<td>0.95</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>0.93</td>
<td>0.93</td>
</tr>
</tbody>
</table>

In summary, the results of the analysis showed that the PMR scale is an internally consistent measure of perception of movie reality by adolescent boys' from a wide age-range and from varying backgrounds.

Parental Movie Mediation Index

Respondents were asked two parental mediation questions which concerned their viewing and discussion of movies with a parent (see Appendix 2). The response categories were “often,” “sometimes,” “not often,” and “never.” For the purpose of the present research, scores were assigned to the questions’ response categories so that higher score would indicate more parental involvement with an adolescent’s movie-viewing habits. The scores were: often (3), sometimes (2), not often (1), and never (0).
A principal components analysis was run on two parental mediation questions concerned with co-viewing and discussion of movies with a parent. The analysis showed that 2 items cleanly loaded on one factor with an eigenvalue of 1.4. This factor accounted for 70.1% of the variance. Based on the content of the items, the factor was labeled \textit{Parental Movie Mediation}. The instrument also showed a satisfactory internal consistency. Cronbach's Alpha was .57.

\textit{A Parental Movie Mediation Index} was created by adding scores on both items and dividing the sum by two. The mean response for this index was 1.6, with a median value of 1.5, which corresponds to a response category between “not often” and “sometimes.”

\textbf{Limits on Game Playing Index}

Respondents were asked two questions about parental control over an adolescent's video/computer game choices and about limits on game playing set by parents (see Appendix 2). The response categories were “yes,” “sometimes,” and “no.” For the purpose of the present research, scores were assigned to the questions' response categories so that a higher score would indicate more parental control over an adolescent’s game-playing habits. The scores were: yes (2), sometimes (1), and never (0).

A principal components analysis was run on these two questions. A one-factor solution (eigenvalue of 1.5) was confirmed for the two items entered into the factor analysis. This factor accounted for 75.0% of the variance. Based on the content of the items, the factor was labeled \textit{Limits on Game Playing}. The instrument also showed a satisfactory internal consistency. Cronbach’s Alpha was .61.
A Limits on Game Playing Index was created by adding scores on both items and dividing the sum by two. The mean response for this index was 0.49, with a median value of 0.5, which corresponds to a response category between “no” and “sometimes.”

Main Results

Media Entertainment Habits

This section addresses the first research question: What are the media entertainment habits of adolescent boys aged 13-16? To answer this research question, descriptive statistics were employed. The section also focuses on parental movie mediation and game control as part of adolescents’ media entertainment habits. The section finishes with determining groups of viewers and players: those whose exposure to movie violence is high (heavy viewers of movie violence) versus those whose exposure is low (light viewers of movie violence), those whose perception of movie reality is real versus those whose perception is fictional, those whose game repertoire contains much violence (“violent” repertoire) versus those whose game repertoire contains little or no violence (“non-violent” repertoire), and finally, those whose parents exert more involvement with an adolescent’s movie-viewing habits versus those whose parents exert less involvement.

Movie Viewing

TV movies. Respondents were asked to report how many TV movies (including cable and pay channels) they watched in an average week. The results indicated that
respondents viewed from 0 to 8 movies per week (M = 2.96, SD = 2.4), with a median value of 2.0.

Videocassette movies. Respondents were asked to report how many videocassette movies they watched in an average week. The results showed that respondents watched from 0 to 7 videocassette movies per week (M = 1.96, SD = 1.51), with a median value of 2.0.

Movie theatre going. Respondents were asked to report how often they typically go to the movie theatre. The choices were: "twice a month," "once a month," "less often," "never," and "other" (specify). The results revealed that 21.2% of the respondents go to the movie theatre twice a month, 34.0% of the respondents - once a month, 36.5% of the respondents - less often, 3.0% - never, and 5.3% of the respondents chose "other" as a response (mostly 3 times per month).

Total viewing. A Weekly Movie Viewing Index was created by summing up the number of movies watched per week on TV and video, multiplying the product of this operation by four, adding the number of theatre movies watched per month, and dividing the total number by four. The Weekly Movie Viewing Index gives the estimate of the weekly number of movies watched on TV, video and movie theatre. The Weekly Movie Viewing Index varied from 0 to 15.5 (M = 5.2, SD = 3.3), with a median value of 4.3.

Movie Repertoires

Respondents were asked several questions regarding their movie preferences. These questions were aimed at getting the information necessary to estimate movie repertoire.
Respondents were asked to choose three out of ten movie genres which they preferred watching. Five of the genres, such as action, crime-drama, horror, western, and war, were assumed to contain more violent content than the remaining five, such as romance, scientific fiction, comedy, drama, and musical (Gunter & Furnham, 1986; McLeod, Atkin, & Chaffee, 1972).

Although some movie genres contain more and some less violent content, there is considerable variation within the given categories. Therefore, it was decided also to include a question regarding favorite movies. Respondents were asked to report three of their current favorite movies. Movie ratings were obtained for each reported movie to give the estimation of the amount of violence in the movie. The ratings of violent content were obtained from the web site Kids-in-Mind™. Kids-in-Mind™ is a service of Critics Inc. that provides non-critical assessments of potentially objectionable movies’ content since 1992, and that is primarily addressed to parents (URL: http://www.kids-in-mind.com). Although there is a high degree of correlation between the ratings by the Motion Picture Association of America (MPAA) and Kids-In-Mind’s ratings, Kids-in-Mind’s, unlike the MPAA, analyzes movies’ content separately for sex, violence, and profanity (on a 10-point scale). Based on this 10-point scale, it was possible to estimate the level of violence in each movie named by adolescents.

In addition to favorite movies, respondents were asked to report how much they enjoyed watching movies with violent content. The results showed that 34% of the respondents enjoyed watching movies with violent content “very much,” 53.2% indicated that they enjoyed it “much,” 11.8% reported that they enjoyed it “not much,” none of the
respondents reported that he completely disliked watching movies with violent content, and 1% did not provide any response.

Finally, respondents were asked to report whether they thought they watched movies with violent content more than movies without violent content. The results demonstrated that 80% of the participants believed that they watched more movies with violent content than without, 19%, on the contrary, believe that they watch more movies without violent content, and 1% did not answer the question.

Two independent raters, graduate students, reviewed the information on movie preferences available for each participant, and assigned individuals to one of two groups: those whose movie repertoire was “violent” and those whose movie repertoire was “non-violent.” The interater reliability was .93 (93% agreement). The contradictory cases were resolved through discussion.

Overall, the rating showed that 95% of the adolescents had “violent” movie repertoires. This finding was confirmed by previous studies indicating that adolescent boys and young men are the main audience for movies with violent content (Arnett, 1994; 1995).

Game Playing

Respondents were asked to report whether they played video/computer games. Results showed that 94.5% of the respondents played video or computer games, 5% did not, and 0.5% did not provide any response.

To estimate the amount of time adolescent boys spent playing video or computer games, they were asked to report how many hours they spent playing video/computer
games on a typical school day, and on a typical Saturday and Sunday.

The results showed that the respondents spent from 0 to 5 hours playing video/computer games on a typical school day ($M = 1.35, SD = 1.08$), with a median value of 1.0; from 0 to 8 hours on a typical Saturday ($M = 1.95, SD = 1.88$), with a median value of 1.5; and from 0 to 8 hours on a typical Sunday ($M = 1.64, SD = 1.68$), with a median value of 1.0.

A *Weekly Game Playing Index* was created by multiplying the number of hours spent playing video/computer games on a typical school day by five, and adding the product from this operation to the number of hours spent playing on Saturday and Sunday. The *Weekly Game Playing Index* gives the amount of weekly number of hours spent playing video/computer games.

The results showed that respondents played video/computer games from 0 to 41 hours per week ($M = 10.32, SD = 8.37$), with a median value of 8.0.

**Game Repertoires**

Respondents were asked to name three of their current favorite video or computer games. Game ratings were employed to estimate the amount of violence in video/computer games indicated by participants. Game ratings were obtained from the Entertainment Software Rating Board (ESRB). The ESRB is an independent, self-regulatory entertainment software rating body that provides services both for rating software titles and online games since 1994. In addition to the age-relevant rating, the ESRB gives content descriptors in terms of violence, sexual themes and language (URL: http://www.esrb.org).
Two independent raters, graduate students, reviewed the content descriptors and game ratings available for each game named by participants, and assigned individuals to one of two groups: those whose game repertoire was “violent” and those whose game repertoire was “non-violent.” The inter-rater reliability was .89 (89% agreement). The contradictory cases were resolved through discussion.

The results showed that 60.1% of participants played video/computer games that contained much violent content, and 6.9% played games that contained either little or no violence. In the remaining cases (17.7% of the participants), it was impossible to determine game repertoires either because they named less than 3 games or because no game ratings were available for the game they named. 15.3% indicated sport games as their favorite.

**Parental Movie Mediation**

As discussed above, respondents were asked several questions enquiring into parental involvement with adolescents’ movie-viewing habits.

The results revealed that 18.7% of the respondents “often” co-viewed movies with a parent, 44.8% co-viewed “sometimes,” 31.0% co-viewed “not often,” and 5.5% “never” co-viewed movies with a parent. In addition, 12.8% of the respondents reported that they “often” discussed movies with a parent, 38.4% discussed ”sometimes,” 35.0% discussed “not often,” and 13.8% “never” discussed movies with a parent.

Respondents were also asked to indicate whether their parent(s) set limits on movie watching. The responses were: “yes,” “sometimes,” and “no”. 11.8% of the respondents indicated that their parent(s) set limits on movie watching, 35.5% indicated
that their parent(s) “sometimes” set limits on movie watching, and 52.7% reported that
their parent(s) did not set limits on movie watching. The summary of the adolescents’
responses to the parental movie mediation questions is presented in Tables 5.

Table 5
Parental Involvement with Adolescents’ Movie-Viewing Habits

<table>
<thead>
<tr>
<th>Coviewing</th>
<th>Discussing</th>
<th>Setting Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>often</td>
<td>often</td>
<td>yes</td>
</tr>
<tr>
<td>18.7%</td>
<td>12.8%</td>
<td>11.8%</td>
</tr>
<tr>
<td>sometimes</td>
<td>sometimes</td>
<td>sometimes</td>
</tr>
<tr>
<td>44.8%</td>
<td>38.4%</td>
<td>35.5%</td>
</tr>
<tr>
<td>not often</td>
<td>not often</td>
<td>no</td>
</tr>
<tr>
<td>31.0%</td>
<td>35.0%</td>
<td>52.7%</td>
</tr>
<tr>
<td>never</td>
<td>never</td>
<td></td>
</tr>
<tr>
<td>5.5%</td>
<td>13.8%</td>
<td></td>
</tr>
</tbody>
</table>

Parental Game Control

As discussed above, respondents were asked several questions pertaining to
parental involvement with adolescents’ game-playing habits.

Respondents were asked to report whether their parent(s) controlled over their
video/computer game choices. 73.9% reported that their parents did not control over their
game choices, 19.2% indicated that their parents “sometimes” controlled over their
choices, and 6.9% stated that their parents exerted control over their game choices.
Respondents were also asked whether their parent(s) set limits on game playing. The
results revealed that 54.7% of parents did not set any limits on game playing, 26.1%
“sometimes” set limits, and 19.2% set limits on video/computer game playing. The
summary of the adolescents’ responses to the questions pertaining to parental
involvement with adolescents’ game-playing habits is presented in Table 6.
Determining Groups of Viewers and Players

**Low/high exposure to movie violence.** As mentioned above, the results of this study, as well as the results of previous studies, confirmed that adolescent boys are the main audience for movies with violent content. Thus, it was assumed that those who watched more movies were being exposed to more movie violence (Dominick, & Greenberg, 1972; Hough, & Erwin, 1997). Based on this assumption, it was decided to divide individuals into two groups: those whose exposure to movie violence was high (heavy viewers) and those whose exposure was low (light viewers) using the median split of the Weekly Movie Viewing Index (see Chapter 3).

Those whose score on the Weekly Movie Viewing Index measured less than 4.3 (median) were assigned to a group with low exposure to movie violence (light viewers), and those whose score on the Weekly Movie Viewing Index measured higher than 4.3 were assigned to a group with high exposure to movie violence (heavy viewers). The cases equal to 4.3 were evenly distributed between the two groups. The results of the split showed that there were 99 heavy viewers of movie violence and there were 104 light viewers of movie violence.

**Real/fiction perception of movie reality.** Respondents were divided into two groups of real versus fiction perceivers based on their scores on the PMR Scale. The
median response category of the scale was 5.0, so those whose PMR score was higher than 5 were labeled as real perceivers and those whose score was less than 5 were labeled as fiction perceivers. The cases equal to 5 were evenly distributed between the groups. The results showed that 102 adolescents were classed as real perceivers and 101 as fictional perceivers.

"Violent"/"non-violent" game repertoires. As mentioned above, independent raters assigned individuals to one of the two groups: those whose game repertoire contained higher levels of violence ("violent" repertoire) and those whose game repertoire contained little or no violence ("non-violent" repertoire). The results showed that 122 individuals had "violent" game repertoires while 14 individuals had "non-violent" repertoires. In the case of 36 individuals, it was impossible to estimate their repertoires due to incomplete information. In addition, those who indicated sport games as their favorite were excluded from the analysis because of ambiguous content: some of the sport games contained violence and some not, thus making it difficult to refer them to any of the groups above.

High/low parental involvement. Participants were also divided into two groups on the basis of parental involvement with their movie-viewing habits. The Parental Movie Mediation Index was used to assign individuals to the two groups. The median of the sample on the Parental Movie Mediation Index was 1.5 which corresponds to a response category between "not often" and "sometimes." This time, the groups were split not on the basis of the median split but on the basis of the conceptual definition of parental involvement. For the purpose of the present research, those adolescents whose Parental Movie Mediation Index was 2 ("sometimes") or higher were placed in the group with
high parental involvement, and those whose Parental Movie Mediation Index was less than 2 were placed in the group with little or no parental involvement. The results demonstrated that 91 boys had parent(s) who were involved with their adolescents’ movie-viewing habits, and that 112 boys had parents who were involved little or not at all.

Attitudes and Beliefs Regarding Aggression

This section addresses the second research question: *What are the attitudes and beliefs of adolescent boys regarding aggression?* To answer this research question, descriptive statistics were employed.

The Attitudes and Beliefs regarding Aggression Scale (ABRA Scale) consisted of 17 items with possible item scores from 1 (do not agree at all) to 4 (completely agree). Given that 17 items were retained in the scale, possible scores ranged from 17 to 68, with higher scores indicating attitudes favoring aggression. The results showed that the instrument yielded a full range of scores, from 17 to 68. This range of scores indicated pronounced variability in the attitudes and beliefs of adolescent boys regarding aggression. The analysis revealed several outliers. However, they were not extreme, and thus they were not deleted from the analysis. The distribution for the total score, as well as the distribution on each of the three scales, had one mode and did not depart markedly from the shape of the normal curve (Appendix 7,8,9).

The average score for the sample on the Aggression Legitimate subscale was 15.7 (SD = 5.7), with a median value of 14.0. This score corresponds to an average item score of 1.96, which stands close to “agree a little” (2).
The average score for the sample on the Aggression Pays subscale was 9.6 ($SD = 3.6$), with a median value of 9.0. This score corresponds to an average item score of 1.91, which also stands close to “agree a little” (2).

The average score for the Stay Out subscale was 9.8 ($SD = 3.4$), with a median value 10.0. This score corresponds to an average item score of 2.44, which stands right in the middle of “agree a little” (2) and “agree a lot” (3).

As an overall characterization, one could say that the sample average respondent’s attitude on Aggression Legitimate and Aggression Pays subscales were moderate. However, an average respondent expressed a high level of agreement with the belief that one should not intervene when peers were fighting or picking on someone.

**Differences in Attitudes Toward Violence Between Groups of Viewers**

This section addresses the third research question: *Are there differences in attitudes and beliefs regarding aggression between heavy and light viewers of movie violence?* Differences in attitudes toward violence between heavy and light viewers of violence will be analyzed in conjunction with perception of movie reality and parental involvement with an adolescent’s movie-viewing habits because these variables come to intervene in the relationship between exposure to movie violence and attitudes toward violence.

A 3-way ANOVA was conducted to determine mean differences between the groups. Three of the grouping variables were exposure to movie violence, perception of movie reality, and parental involvement with an adolescent’s movie viewing habits. The first grouping variable (EXPOSURE) was represented by two groups: those whose
exposure was low and those whose exposure was high. The second grouping variable (PERCEPT) was also represented by two groups: those who perceived movie reality as real and those who perceived it as fiction. The last grouping variable (PINVOLVE) was represented by two groups: those whose parents showed relatively more involvement with an adolescent's movie-viewing habits (co-viewing and discussion of movies) and those whose parents showed little or no involvement.

Attitudes and beliefs regarding aggression were entered as dependent variables. Each of the subscales of the ABRA scale was analyzed separately because each scale represented a different dimension of attitudes toward violence (AT1 - belief that aggression is legitimate and warranted; AT2 - belief that aggression enhances power and status; AT3 - belief that one should not intervene in fights). Thus, the third research question consisted of three sub-questions, results of which are presented below.

Aggression is Legitimate and Warranted

This section addresses the first sub-question: Are there differences between heavy and light viewers of movie violence regarding the belief that aggression is legitimate and warranted? As mentioned before, the differences between heavy and light viewers were analyzed in conjunction with movie reality perception and parental involvement. To answer this sub-question, the data were subjected to a three-way analysis of variance (3-way ANOVA) in which attitudes and beliefs that aggression is legitimate and warranted (Subscale 1 of the ABRA Scale) served as a dependent variable.

Table 7 shows the means and standard deviations for the groups formed by the three independent (grouping) variables. The report of the analysis of variance is presented in Table 8.
Table 7

Means and Group Sizes for the Aggression Legitimate Subscale

<table>
<thead>
<tr>
<th>Exposure to movie violence</th>
<th>Parental involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>high</td>
</tr>
<tr>
<td>real perception</td>
<td>15.9</td>
</tr>
<tr>
<td>n = 20</td>
<td>n = 30</td>
</tr>
<tr>
<td>fiction perception</td>
<td>15.3</td>
</tr>
<tr>
<td>n = 25</td>
<td>n = 29</td>
</tr>
</tbody>
</table>

Table 8

Three-way ANOVA for the Aggression Legitimate Subscale

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>2.80</td>
<td>1</td>
<td>0.09</td>
<td>0.77</td>
</tr>
<tr>
<td>Percept</td>
<td>41.43</td>
<td>1</td>
<td>1.28</td>
<td>0.26</td>
</tr>
<tr>
<td>Pinvolve</td>
<td>65.94</td>
<td>1</td>
<td>2.04</td>
<td>0.16</td>
</tr>
<tr>
<td>Exposure*Percept</td>
<td>60.50</td>
<td>1</td>
<td>1.87</td>
<td>0.17</td>
</tr>
<tr>
<td>Exposure*Pinvolve</td>
<td>76.66</td>
<td>1</td>
<td>2.37</td>
<td>0.13</td>
</tr>
<tr>
<td>Percept*Pinvolve</td>
<td>29.40</td>
<td>1</td>
<td>0.91</td>
<td>0.34</td>
</tr>
<tr>
<td>Exposure<em>Percept</em>Pinvolve</td>
<td>0.09</td>
<td>1</td>
<td>0.003</td>
<td>0.96</td>
</tr>
<tr>
<td>Error</td>
<td>6319.870</td>
<td>195</td>
<td>32.410</td>
<td></td>
</tr>
</tbody>
</table>

The results (Table 8) showed that no statistically significant differences were obtained in the analysis of variance for the three independent variables and their interactions. There was main effect difference neither between those more and less exposed to movie violence nor between real and fiction perceivers. In addition, no main
effect difference existed on parental involvement variable. Moreover, no interaction approached significance.

To conclude, neither significant main effects nor significant interactions were found as a result of analysis of variance of the adolescent boys’ belief that aggression is warranted and legitimate.

**Aggression Enhances Status and Power**

This section addresses the second sub-question: *Are there differences between heavy and light viewers of movie violence regarding the belief that aggression enhances status and power?*

To answer this research question, the data were subjected to a three-way analysis of variance (3-way ANOVA) in which attitudes and beliefs that aggression enhances power and status (Subscale 2 of the ABRA Scale) served as a dependent variable. As in the previous analysis, exposure to movie violence, perception of movie reality, and parental involvement served as grouping variables. Table 9 shows the means and standard deviations for the groups formed by the three grouping variables.

**Table 9**

**Means and Group Sizes for the Aggression Pays Subscale**

<table>
<thead>
<tr>
<th>Exposure to movie violence</th>
<th>Parental involvement</th>
<th>high</th>
<th>low</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>high</td>
<td>10.6</td>
<td>8.9</td>
</tr>
<tr>
<td>low</td>
<td>low</td>
<td>9.3</td>
<td>10.0</td>
</tr>
<tr>
<td>real perception</td>
<td>n = 20</td>
<td>n = 30</td>
<td>n = 23</td>
</tr>
<tr>
<td>fiction perception</td>
<td>8.9</td>
<td>10.1</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>n = 25</td>
<td>n = 29</td>
<td>n = 23</td>
</tr>
</tbody>
</table>
Table 10

Three-way ANOVA for the Aggression Pays Subscale

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>0.36</td>
<td>1</td>
<td>0.03</td>
<td>0.87</td>
</tr>
<tr>
<td>Percept</td>
<td>2.64</td>
<td>1</td>
<td>0.21</td>
<td>0.65</td>
</tr>
<tr>
<td>Pinvolve</td>
<td>9.38</td>
<td>1</td>
<td>0.74</td>
<td>0.39</td>
</tr>
<tr>
<td>Exposure*Percept</td>
<td>0.06</td>
<td>1</td>
<td>0.01</td>
<td>0.95</td>
</tr>
<tr>
<td>Exposure*Pinvolve</td>
<td>21.04</td>
<td>1</td>
<td>1.66</td>
<td>0.20</td>
</tr>
<tr>
<td>Percept*Pinvolve</td>
<td>43.36</td>
<td>1</td>
<td>3.41</td>
<td>0.07</td>
</tr>
<tr>
<td>Exposure<em>Percept</em>Pinvolve</td>
<td>12.53</td>
<td>1</td>
<td>0.99</td>
<td>0.32</td>
</tr>
<tr>
<td>Error</td>
<td>2478.706</td>
<td>195</td>
<td>12.711</td>
<td></td>
</tr>
</tbody>
</table>

Results of the analysis of variance for the Aggression Pays subscale (Table 10) showed the main effect was not significant for the exposure, the perception or the parental involvement. In addition, no interactions existed.

In summary, neither statistically significant main effects nor significant interactions were found as a result of analysis of variance of the adolescent boys’ belief that aggression enhances power and status.

One Should Not Intervene in Fights

This section addresses the third sub-question: Are there differences between heavy and light viewers of movie violence regarding the belief that one should not intervene in fights?

To answer this research question, the data were subjected to a three-way analysis of variance (3-way ANOVA) in which attitudes and beliefs that one should not intervene in fights (Subscale 3 of the ABRA Scale) served as a dependent variable. As in the two
previous analyses, exposure to movie violence, perception of movie reality, and parental involvement served as grouping variables. Table 11 shows the means and standard deviations for the groups formed by the three grouping variables. The report of the analysis of variance is presented in Table 12.

Table 11

**Means and Group Sizes for the Stay Out Subscale**

<table>
<thead>
<tr>
<th></th>
<th>Exposure to movie violence</th>
<th>Parental involvement</th>
<th>high</th>
<th>low</th>
<th>high</th>
<th>low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low</td>
<td>high</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>real</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>perception</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n=20</td>
<td>n=30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fiction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>perception</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n=25</td>
<td>n=29</td>
</tr>
</tbody>
</table>

Table 12

**Three-way ANOVA for the Stay Out Subscale**

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>2.29</td>
<td>1</td>
<td>0.19</td>
<td>0.66</td>
</tr>
<tr>
<td>Percept</td>
<td>1.13</td>
<td>1</td>
<td>0.10</td>
<td>0.76</td>
</tr>
<tr>
<td>Pinvolve</td>
<td>2.20</td>
<td>1</td>
<td>0.18</td>
<td>0.67</td>
</tr>
<tr>
<td>Exposure*Percept</td>
<td>19.58</td>
<td>1</td>
<td>1.64</td>
<td>0.20</td>
</tr>
<tr>
<td>Exposure*Pinvolve</td>
<td>3.93</td>
<td>1</td>
<td>0.33</td>
<td>0.57</td>
</tr>
<tr>
<td>Percept*Pinvolve</td>
<td>3.52</td>
<td>1</td>
<td>0.29</td>
<td>0.59</td>
</tr>
<tr>
<td>Exposure<em>Percept</em>Pinvolve</td>
<td>11.89</td>
<td>1</td>
<td>0.99</td>
<td>0.32</td>
</tr>
<tr>
<td>Error</td>
<td>2334.907</td>
<td>195</td>
<td>11.974</td>
<td></td>
</tr>
</tbody>
</table>
Results of the analysis of variance for the Stay Out subscale (Table 12) revealed that there were no main effect differences for all three grouping variables or their interactions. In summary, no statistically significant main effects and no significant interactions were found as a result of analysis of variance of the adolescent boys’ belief that one should not intervene in fights.

Summary

The results of the analysis of variance of each dimension of adolescent boys’ attitudes toward violence, as measured by the subscales of the ABRA scale, revealed no statistically significant differences between groups of viewers. No main effect was found on exposure to movie violence, perception of movie reality, nor on parental involvement. In addition, none of the interactions approached significance.

Although no statistically significant differences were found in the analysis of variance, it is worthwhile reporting that the results, in general, were consistent with the expectations, particularly for those with high exposure to movie violence (See Tables 7, 9, 11). Analysis of the cell means for those with high exposure to movie violence revealed that, on average, greater parental involvement with their adolescents’ movie-viewing habits resulted in less adolescents’ support for attitudes favoring violence, regardless of movie reality perception. Similarly, those boys who recognized movie reality as fiction, on average, tended to be less supportive of the attitudes favoring use of violence, regardless of parental involvement with their movie-viewing habits.

Furthermore, inspection of the means for those with high exposure to movie violence revealed that interaction of real perception of movie reality and low parental
involvement with viewing habits manifested itself in the highest score on both the
*Aggression Legitimate* and the *Stay Out* subscales. Conversely, interaction of movie
perception as fiction and high parental involvement minimized the attitudes supportive of
aggression on the aforementioned subscales.

Inspection of the cell means of those with low exposure to movie violence
revealed that results were only partially consistent with the expectations, and were
difficult to interpret.

**Differences in Attitudes Toward Violence Between Groups of Players**

This section addresses the fourth research question: *Are there differences in
attitudes about aggression between those who play “violent” and those who play “non-
vviolent” video/computer games?* To answer this research question, a series of two-sample
tests was employed.

As described above, two independent raters assigned participants to one of the
following groups: those whose game repertoire was “violent” and those whose game
repertoire was “non-violent.” The results showed that 122 adolescent boys played games
that contained high levels of violence while 14 adolescents played games that contained
little or no violence. Before running a t-test, it was important to test the homogeneity of
the two population variances. To test the homogeneity of variances, a simple statistical
test, the $F$ ratio, was employed. The computation of $F$ was accomplished by dividing the
smaller variance into the larger variance. The resulting quotient, $F$, was interpreted for
statistical significance from a table of the $F$ distribution. The results showed that $F_{121,13}$
equaled to 2.6, 2.4, and 1.2, for each subscale respectively. These computed $F$s did not
exceed the table value of $F_{121.13} = 3.24$, at $p < .02$, and thus the variances for each subscale were considered to be homogeneous.

According to Popham and Sirotnik (1992), when the number of individuals in the groups is unequal but the variances are homogeneous, a pooled-variance formula should be used to interpret the obtained value of $t$.

Table 13 presents the results of t-tests of the mean differences in three dimensions of attitudes toward violence, as measured by the subscales of the ABRA.

Table 13

Results of Two-sample T-tests between Two Groups of Players

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGGRESSION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE</td>
<td>122</td>
<td>15.9</td>
<td>5.8</td>
<td>2.07</td>
<td>134</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>12.6</td>
<td>3.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGGRESSION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAYS</td>
<td>122</td>
<td>9.3</td>
<td>3.6</td>
<td>.4</td>
<td>134</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>8.9</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAY OUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>122</td>
<td>9.5</td>
<td>3.6</td>
<td>1.6</td>
<td>134</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>7.9</td>
<td>3.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of t-tests indicated that there were no statistically significant differences in attitudes toward violence on the Aggression Pays and Stay Out subscales. However, the results confirmed a statistically significant difference regarding the attitude that aggression is legitimate and warranted. Those adolescents who played
video/computer games that contained high levels of violence tended to be more supportive of this attitude than those whose game repertoires contained little or no violence.

**Prediction of Attitudes About Aggression**

This section addresses the fifth research question: *How well media entertainment habits, perception of movie reality, and parental involvement with media entertainment habits predict adolescent boys’ attitudes about aggression?* To answer this research question, a standard multiple regression analysis was performed on the data.

Each subscale on the ABRA Scale served as a criterion variable and was entered separately to allow for a prediction of each of the three dimensions of attitudes toward violence. Exposure to movie violence, perception of movie reality, parental involvement with their adolescents’ movie-viewing habits, amount of video/computer game playing, parental involvement with their adolescents’ game-playing habits, and game repertoires were designated as the predictor variables.

All of the predictor variables were continuous with the exception of the game repertoire variable that was dichotomous. Two variables (exposure to movie violence and amount of video/computer game play) had some outliers. To ensure that the outliers did not influence the results, a multiple regression analysis was run twice: outliers included and outliers excluded. The results of both analyses did not differ significantly. Therefore, outliers were kept in the analysis for the purpose of keeping a larger sample.

Table 14 shows the results of a complete multiple regression.
Table 14
The Results of Multiple Regression Analyses for the Three Criteria Variables

<table>
<thead>
<tr>
<th>Criteria (ABRA)</th>
<th>Predictors</th>
<th>Beta</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGGRESSION</td>
<td>Exposure to movie violence</td>
<td>.14</td>
<td>1.65</td>
<td>.10</td>
</tr>
<tr>
<td>LEGITIMATE*</td>
<td>Perception of movie reality</td>
<td>.12</td>
<td>1.48</td>
<td>.14</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with movies</td>
<td>-.22</td>
<td>-2.61</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Amount of game play</td>
<td>-.10</td>
<td>-1.30</td>
<td>.19</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with games</td>
<td>-.25</td>
<td>-3.00</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Game repertoire</td>
<td>-.16</td>
<td>-2.04</td>
<td>.04</td>
</tr>
<tr>
<td>AGGRESSION</td>
<td>Exposure to movie violence</td>
<td>-.09</td>
<td>-0.98</td>
<td>.33</td>
</tr>
<tr>
<td>PAYS**</td>
<td>Perception of movie reality</td>
<td>.10</td>
<td>1.11</td>
<td>.27</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with movies</td>
<td>.02</td>
<td>.22</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>Amount of game play</td>
<td>.03</td>
<td>.30</td>
<td>.77</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with games</td>
<td>-.10</td>
<td>-1.03</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td>Game repertoire</td>
<td>-.04</td>
<td>-.40</td>
<td>.69</td>
</tr>
<tr>
<td>STAY OUT***</td>
<td>Exposure to movie violence</td>
<td>.07</td>
<td>.77</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>Perception of movie reality</td>
<td>.02</td>
<td>.17</td>
<td>.87</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with movies</td>
<td>-.11</td>
<td>-1.23</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Amount of game play</td>
<td>-.04</td>
<td>-.49</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>Parental involvement with games</td>
<td>-.16</td>
<td>-1.75</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Game repertoire</td>
<td>-.12</td>
<td>-1.36</td>
<td>.18</td>
</tr>
</tbody>
</table>

*Note.  R=.46, R²=.214, F=5.87, p=.000.

**Note.  R=.15, R²=.023, F=.51, p=.797.

***Note.  R=.26, R²=.069, F=1.60, p=.152.
It can be seen from Table 14 that the set of predictor variables predicted significantly only the Aggression Legitimate attitude. The multiple R was .46 which indicated that the relationship between the criterion variable and the predictor variables was significantly different from zero, $F(6, 129) = 5.86, p < .000$.

The squared multiple R indicated that 21.4% of the variance was accounted for in the prediction. The tolerance of each of the variables was between .88 and .97, thus indicating there was no multicollinearity among the variables. Three out of the six variables contributed significantly to the prediction of the Aggression Legitimate attitude in adolescent boys. They were parental involvement with game-playing habits, parental involvement with movie-viewing habits, and game repertoire (standard coefficients: -.25, -.22, and -.16 respectively).

The results indicated that more parental control over game-playing habits, as well as more parental involvement with movie-viewing habits, led to the decrease in the adolescents' scores on the Aggression Legitimate scale. In addition, the more violent game repertoire an adolescent had, the more supportive he was of the attitude that aggression was legitimate and warranted.

To conclude, out of the three dimensions of attitudes toward violence, as measured by the ABRA Scale, only the Aggression Legitimate attitude was significantly predicted by the set of the predictor variables, at a moderate level of correlation. In this prediction, parental involvement with media entertainment habits (both movie-viewing and game-playing) and game repertoire variables each accounted for the largest amount of variance, at a level statistically significant from zero, and they were negatively related to the Aggression Legitimate subscale, indicating that the more parents were involved
with their adolescents’ media entertainment habits and the less violent game repertoires the adolescents had, the less supportive the boys were of the attitude that aggression is legitimate and warranted.
CHAPTER 5

DISCUSSION

Overview

The present chapter examines the results of the study. The discussion will be presented separately for each research question in the sequence in which the questions were addressed in Chapter 4.

Adolescent Boys' Media Entertainment Habits

Overall, the results show that adolescent boys spend a significant amount of time with various media, both on school days and on the weekend. The discussion of adolescent media entertainment habits is presented separately for movie viewing and game playing. Parental movie and game mediation will be discussed in conjunction with adolescents' media entertainment habits.

Movie Viewing

The results reveal that adolescent boys watch from 0 to 8 television movies per week, with an average value of 2.96. In addition, they watch from 0 to 7 videocassette movies per week, with an average of 1.96. Moreover, 21.2% of adolescent boys report that they go to the movie theatre twice a month, 34% of the respondents - once a month, 36.5% - less often, and 3% - never. The Weekly Movie Viewing Index, which gives the estimate of weekly number of movies watched on TV, video, and movie theatre, varied from 0 to 15.5 with an average of 5.2. These results suggest that watching movies is a popular leisure activity among adolescent boys aged 13-16, and this finding is consistent with the results of other studies (Arnett, 1995).
The results also suggest that adolescent boys are not only the main movie audience but they are also the main audience for movies with violent content. Two independent raters, graduate students, evaluated the participants' movie repertoires. The results show that 95% of the participants watch movies with a substantial amount of violence. This finding is consistent with the results of the previous studies which indicate that adolescent boys and young men are the main audience for movies with violent content (Arnett, 1994; Klein et al., 1993).

In addition, 34% of the respondents report that they enjoy watching movies with violent content “very much,” 53.2% enjoy it “much.” 11.8% enjoy it “not much,” and none of the respondents completely dislikes watching movies with violent content. The results also demonstrate that 80% of the participants believe that they watch more movies with violent content, while only 19%, on the contrary, believe that they watch more movies without violent content. These results are an additional confirmation that many adolescent boys are heavily exposed to movie violence.

Game Playing

Although television remains the most available medium, the popularity of other media, and especially video and computer games, is rising (Scott, 1995). The results of the present research show that 94.5% of the respondents play either video or computer games, as opposed to only 5% who do not play. The results of the surveys, the majority of which are conducted in the United States, demonstrate that adolescents spend on average about 4 hours playing games per week (Dorman, 1997; Kubey & Larson, 1990). The results of the present study suggest that adolescents might spend even more time
playing video and computer games. The present research shows that adolescent boys spend from 0 to 5 hours playing video/computer games on a typical school day, with an average of 1.35; from 0 to 8 hours on a typical Saturday, with an average of 1.95; and from 0 to 8 hours on a typical Sunday, with an average of 1.64. Overall, they play video/computer games from 0 to 41 hours per week, with an average value of 10.32 (median of 8). These results reveal that adolescent boys spend playing games on average from 8 to 10 hours per week. In addition, for some adolescents video/computer games represent the predominant medium (up to 41 hours of game playing per week).

Consistent with the results of the previous research (Barnett, Vitaglione, Harper, Quackenbush, Steadman, & Valdez, 1997; Griffiths & Hunt, 1995), the results of this study show that many adolescent boys play games containing high levels of violence. An evaluation of the game repertoires conducted by two independent raters reveals that 60.1% of the participants play video/computer games that contain high levels of violence, as opposed to only 6.9% who play games that contain either little or no violence. In addition, 15.3% of the boys indicate sport games as their favorite. Although the last group was excluded from the analysis for the reasons described in Chapter 4, it is worthwhile reporting that some of the sport games named by the participants contain high levels of violence (e.g. boxing games).

It can be summarized that, by time criterion alone, watching movies and playing video/computer games occupies a large portion of adolescent boys’ lives, more than other sources of socialization, such as parents, and peers (Kane, Taub, & Hayes, 2000). Although mere exposure to media cannot speak to cause-and-effect concerns, it is believed that media exert a significant displacement effect; time spent in front of the
screen means less time spent for other activities, such as reading, exercising, and interacting with the family and friends (Strasburger & Donnerstein, 1999). The results also show that adolescents are exposed to high levels of violence in the media, and this should elicit serious concern.

**Parental Movie Mediation**

It is often argued that parents can exert the most lasting effect on their children. It is hypothesized, as well, that parental mediation is a successful means of reducing the media's impacts. Parental involvement, such as coviewing, discussing, and monitoring youth's media choices, is confirmed to be an effective mechanism for mediating harmful effects of violent media viewing (Austin, 1993; Horton & Santogrossi, 1978).

The surveys show, however, that most parents do not regularly monitor or control the media to which the adolescents are exposed (Strasburger & Donnerstein, 1999). The results of the present study also demonstrate that many parents are not sufficiently involved with their children's media entertainment habits. Only 18.7% of the boys report that they often coview movies with a parent, less than half of the boys (44.8%) indicate that they sometimes coview, 31.0% coview “not often,” and 5.5% never coview movies with a parent.

Even a smaller number of parents is reported to regularly discuss movies with their adolescents. The results reveal that only 12.8% of the boys often discuss movies with a parent, 38.4% sometimes discuss, 35.0% discuss “not often,” and 13.8% never discuss movies with a parent. In addition, 11.8% of the adolescents indicate that their parent(s) set(s) limits on movie watching, 35.5% indicate that their parent(s) sometimes
set limits on movie watching, and more than half (52.7%) report that their parent(s) do(es) not set any limits on movie watching.

In summary, although parental mediation, especially "active" mediation, such as discussing movies, is confirmed to be effective in reducing media influences, the results of the present study, as well as the results of the previous studies, show that most parents are not actively involved with their adolescent boys' movie viewing habits.

**Parental Game Mediation**

As mentioned previously, parental mediation is an effective mechanism in reducing potential harmful effects of media exposure. Although there is little research that has focused on the effects of video/computer game playing, it is hypothesized that parental game mediation can reduce possible harmful impacts of exposure to this medium, particularly of exposure to games with high levels of violent content (Funk & Buchman, 1995).

The results of this study show that 73.9% of parents do not have control over their adolescents' game choices, 19.2% sometimes exert control, and only 6.9% of the parents regularly exert control. The majority of the parents (54.7%), in fact, do not set any limits on video/computer game playing, 26.1% sometimes set limits, and only 19.2% regularly set limits.

To conclude, the present research reveals that parental involvement with their adolescents game-playing habits is very limited. Because no published studies regarding parental involvement with their adolescents' game-playing habits were found for this study, these results, therefore, should be considered exploratory.
Adolescent Boys’ Attitudes About Aggression

Many of the existing violence-prevention programs consider a decision-making approach, and they also emphasize the acquisition of conflict management skills (Haynie, Alexander, & Walters, 1997). Shapiro et al. (1997) suggest, however, that the development of attitudes unfavorable toward the use of aggression would enhance the effectiveness of violence-prevention programs because “youth may not be motivated to learn nonviolent skills if they believe violence to be the most effective and honorable response to conflict or disrespect” (p. 319). Thus, development of attitudes unfavorable toward aggressive problem solving may be a necessary precondition to psychosocial skill development (Shapiro et al., 1997). This suggestion is also supported by several studies that confirm the link between attitudes about aggression and aggression toward peers (Huesman & Guerra, 1997; Vernberg et al., 1999).

Recently, the attitudinal variable has been introduced to some violence-prevention programs (Howard, Flora, & Griffin, 1999). Some program-evaluations have shown that changes in attitudes toward violence reduced instances of aggressive behavior among adolescents (Guerra & Slaby, 1990). All of the above underline the importance of studying adolescents’ violence-related attitudes.

The results of the present research show that the average sample respondent’s attitude on the Aggression Legitimate subscale is 15.7, and on the Aggression Pays subscale is 9.6. These scores correspond, respectively, to the average item scores of 1.96 and 1.91, which both stand close to the “agree a little” response (2). These results indicate that the average respondent’s attitude that aggression is legitimate and warranted and that aggression brings power and status are moderate.
The average score for the Stay Out subscale is 9.8. This score corresponds to an average item score of 2.44, which stands in the middle of “agree a little” (2) and “agree a lot” (3). This result suggests that an average respondent expresses a high level of agreement with the belief that one should not intervene in fights.

Verngerg et al. (1999) obtained the same result for their sample of early adolescents in the United States. The average for the US sample on the Stay Out subscale was 2.7 or the 3rd point (“agree a lot”) on a 4-point scale. In addition, the present result are also consistent with that of Fatum and Hoyle (1996), in that many adolescents report fighting and other forms of aggression as a possible way of conflict resolution. To conclude, the present study, as well as previous studies, confirms adolescents’ hands-off attitude about helping victimized peers.

Differences in Attitudes Between Groups of Viewers

The recent television violence studies show that primetime broadcast and basic cable programs in North America contain high levels of violence (Schroeder, 1998). For example, the National Television Violence Study found that about 40% of the violent incidents are initiated by “good” characters, and nearly 75% of violent scenes contain no criticism or punishment for violence (MediaScope, 1996). Although adolescents are the main consumers of programs with such justified and often glorified violence (Arnett, 1994), it is widely accepted that, in order to understand the relationship between television violence and antisocial behavior in the real life, intervening variables should be taken into account; these include the viewer’s characteristics, program characteristics, and also environmental variables (Dorr, 1986).
The present study examined the interaction of exposure to movie violence with adolescent boys' attitudes about aggression, within the context of the movie reality perception and parental involvement with their adolescents' movie-viewing habits. The results show that statistically significant differences exist neither between heavy and light viewers of movie violence nor between real and fiction perceivers. In addition, those boys whose parents exert higher levels of parental involvement with their adolescents' movie-viewing habits do not differ significantly in their attitudes about aggression from those boys whose parents show less or no involvement. Interestingly, none of the interactions of the above intervening variables was found to be significant.

The fact that no difference in attitudes was found between heavy and light viewers of movie violence on the basis of mere exposure to movie violence is not unexpected. Although exposure to media violence is one of the main variables to consider in the relationship between media violence and attitudes about aggression, exposure alone is rarely crucial in this relationship, especially in the survey design (Dominick & Greenberg, 1972; Paik & Comstock, 1994). It was anticipated, however, that there would be significant differences between heavy and light viewers when exposure to movie violence is analyzed in the context of movie reality perception and parental involvement.

Perception of television reality is believed to be an important consideration in the relationship between exposure to screen violence and antisocial behavior. Researchers state that, if the viewers perceive the violent content as realistic, they will be more likely to establish and maintain aggressive scripts as well as believe that aggression is an appropriate solution to interpersonal problems (Berkowitz, 1986).
It was expected in this study, therefore, that real perceivers, as opposed to fiction perceivers, would have attitudes more favorable toward use of violence. The results for the heavy viewers of movie violence were consistent with this expectation, however *not on a statistically significant level*. As pointed out in the results section, the analysis of the cell means reveals that, on average, those boys who recognize movie reality as fiction tend to be less supportive of the attitudes favoring use of aggression. In addition, interaction of real movie perception and low parental involvement results in the highest score on both the *Aggression Legitimate* and the *Stay Out* subscales. On the contrary, interaction of movie perception as fiction and high parental involvement results in the lowest score on the above-mentioned scales.

There are several possible explanations of the fact that no statistically significant differences in attitudes were found between real and fiction perceivers. First, it could be that the perception of movie reality is not that crucial for adolescents as compared to children. As outlined in the literature review, Huesman et al. (1980) found that children's perceptions of television violence as realism declines with age, and, thus, it might be that the vitality of this intervening variable decreases in adolescence. According to Huesman et al. (1980), another important variable comes into play - identification with TV characters. There is research confirming the importance of identification with a TV character as an intervening variable, especially for boys. Eron (1982) found that those boys who had higher self-rated identification with TV characters had higher peer-nominated aggression scores.

Second, internalizing the beliefs both that aggression is legitimate and that aggression brings power and status would require some moral reasoning on the behalf of
adolescents, beyond pure perception of movie reality. Although movie violence may increase the availability of both aggressive scripts and antisocial attitudes associated with them, the acquisition of such attitudes may be dependant on individual moral considerations. According to Buckley (2000), adolescents understand motives and consequences of violent actions because they are developmentally capable for abstract thought and are advanced in social perspective taking. Consequently, even if an adolescent believes in the reality of aggression depicted in the movies, encoding and later retrieving of aggressive scripts and attitudes might be subject to idiosyncratic moral beliefs.

Finally, the present research design could not take into account the portrayal conditions of movie violence. Although recent studies reveal that the context in which most violence is presented on television poses risks for viewers (Schroeder, 1998), it is unknown whether or not the violent actions in the movies a participant has seen, are punished or not, whether antisocial behavior is rewarded or not, and whether use of violence is justified and glorified or not. It is believed that all these conditions will either increase or decrease the likelihood of accepting the beliefs that aggressive problem solving is acceptable and legitimate in the real life (Murray, 1995).

The present research design also took into consideration parental involvement, which was looked at as discussing and coviewing the movies with adolescents. It was strongly expected that those boys whose parents exert less involvement would score significantly higher on the Attitudes and Beliefs regarding Aggression Scale than those boys whose parents show higher levels of involvement. This expectation is based on the research evidence that children who hear adult commentary about the violent acts in the
television programs they watch exhibit less aggressive behavior and express less aggressive attitudes (Corder-Bolz, 1980; Horton, & Santogrossi, 1978).

The results were consistent with the expectations for the heavy viewers of movie violence, however again not on a statistically significant level. As reported in the results section, the analysis of the cell means reveals that boys of the parents who show higher involvement with their adolescents' movie-viewing habits have less support for attitudes favoring violence, as compared to boys whose parents show little or no involvement. Moreover, interaction of low parental involvement and real movie perception manifests itself in the highest score on both the Aggression Legitimate and the Stay Out subscales. Conversely, interaction of high parental involvement and movie perception as fiction results in the lowest score on the above mentioned scales.

It is possible that the research design itself could influence the result. In order to divide the participants into two groups of those with high and those with low parental involvement, a split was performed not on the basis of the median value but on the basis of the conceptual definition of parental involvement. The problem is that the median of the sample on the Parental Movie Mediation Index was 1.5, which corresponds to a response category between “not often” and “sometimes.” In my view, this response category, conceptually, was not representative of high parental involvement. Therefore, as pointed out in the results section, the group with high parental involvement included those adolescents whose Parental Movie Mediation Index was 2 (“sometimes”) or higher, and those whose Parental Movie Mediation Index was less than 2 were placed in the group with little or no parental involvement. It might be that dichotomizing the data, and thus disrupting the continuity of this variable, could be a possible explanation of why no
statistically significant differences in attitudes were found between those adolescents whose parents exert high involvement and those whose parents exert little or no involvement with their adolescents' movie-viewing habits.

The results obtained for the *Stay Out* subscale deserve special attention. Surprisingly, no differences were found between heavy and light viewers of movie violence on this subscale. In addition, none of the interactions approached significance. The *Stay Out* subscale measured acceptance of aggressive behavior as displayed by others. According to the desensitization hypothesis, repeated viewing of media violence leads to a reduction in emotional responsiveness to violence on the screen and to an increased acceptance of violence in real life (Gunter, 1994). Thus, mere exposure to numerous violent scenes in movies should contribute to the process of desensitization, and as a result, those who watch more movies, and thus are exposed to more movie violence should be more tolerant of real-life violence (Drabman & Thomas, 1974a; 1974b; Molitor & Hirsch, 1994).

The results of this study reveal that light viewers of movie violence are as tolerant and accepting of real-life aggression as are heavy viewers. In our view, this result neither undermines the importance nor denies the existence of the desensitization process as a result of continuous exposure to movie violence. However, it might require a different interpretation. The present finding is consistent with that of Woodfield's (1989) research, in that no statistically significant difference regarding acceptance and tolerance of aggressive problem solving was found between the children who had watched violent and nonviolent materials. Woodfield (1989) interpreted her results as a toleration of conflict and aggression on a grand scale. Her interpretation was based on a belief that
contemporary children are already so desensitized by having viewed years of strong TV and film violence that the additional increment presented to them in this laboratory study did not affect the participants.

Although Woodfield's study was conducted under laboratory conditions, it is believed that its results could be generalized to this study because it is a survey design study that takes into account every-day media entertainment habits, and, therefore, it can speak to the process of desensitization in real life. The results of this study show a high average score on the Stay Out subscale which additionally confirms that adolescent boys are, in general, tolerant and accepting of violent problem solving, particularly fighting. In our view, the average high score on the Stay Out subscale and absence of a statistically significant difference between heavy and light viewers of movie violence can be explained by the process of desensitization on a grand scale. This could be especially true today when the wide introduction of VCRs and numerous cable and pay channels have increased exposure to passive media violence.

To conclude, the relationship between exposure to movie violence and attitudes favorable toward use of aggression in real life is very complicated. To understand the full context of how exposure to movie violence can impact adolescent boys' attitudes and beliefs about aggression, it may be necessary to address not only whether the viewers perceive movie reality as real or fiction but also whether the boys identify with violent movie characters or not. Moreover, portrayal conditions of movie violence in adolescent's individual movie repertoire should be taken into consideration. Finally, attitudes and beliefs take time to develop, and this research that is a snapshot of the present situation might not reveal the changes in attitudes that take place over time.
Perhaps the effect of movie violence on attitudes about aggression is cumulative and cannot be observed that easily. It is possible that this resulted in not finding statistically significant differences between groups of viewers.

Differences in Attitudes Between Groups of Game Players

Comparatively little research has focused on the relationship between computer/video game playing and antisocial behavior. The literature review for the present study leads to the conclusion that the general pattern of findings in this field confirms that playing violent video/computer games increases the likelihood of subsequent aggressive behavior, and immediate thoughts and feelings (Dill, 1997; Funk, 1992). There is, indeed, no published research that investigated the impact of playing games with violent content on attitudes about aggression. It is hypothesized, however, that attitudes may be affected, resulting in decreased empathy for victims of violence, and in treating violence as a useful problem-solving technique (Anders, 1999; Buchman & Funk, 1996). This hypothesis is based on the research fact that games of the 1990s contain a lot of human-directed violence (Funk, 1992). Playing games with repeated violence directed against human characters reinforces that violence is obligatory, easily justified, fun and without any negative consequences (Buchman & Funk, 1996).

According to Funk and Buchman (1995), the latter is enhanced due to the player’s ability to magically return a character to life by pressing the button “continue”. This erases the link between violence and its consequences, and, as a result, violent problem solving might be integrated into the players’ conception of and expectation about reality.
This study attempted to investigate the differences in attitudes about aggression between those who play games with high levels of violence and those who play games with little or no violence. The results reveal no statistically significant differences on the Aggression Pays and the Stay Out subscales. The results show, however, a statistically significant difference on the Aggression Legitimate subscale. These results suggest that those who play “violent” games, as opposed to those who play “non-violent” games, hold a stronger belief that violent problem solving is legitimate and warranted. This result, therefore, confirms the hypothesis that those who play “violent” games tend to treat aggression as a viable problem solving technique.

Caution should be taken in interpreting these results because as stated above none of the published studies explored the relationship between game repertoire and attitudes about aggression, and thus the present results should be considered exploratory.

Prediction of Attitudes About Aggression

The research in the field of passive media (television/movies) and their effects on antisocial behavior shows that there is a relationship between exposure to television violence and aggressive behavior and attitudes (APA, 1993). Several meta-analyses found a positive and significant correlation between television violence and antisocial behavior, although to varying degrees depending on the particular research design. The general pattern of findings in these analyses is that the relationship between exposure to television violence and antisocial behavior ranges from .19 in a survey design to .40 in a laboratory design, and in all observations combined it is .10 (Hearold, 1986; Paik, & Comstock, 1994).
The present study attempted to investigate the extent to which adolescent boys’ media entertainment habits and parental involvement with their adolescents’ media entertainment habits predict boys’ attitudes about aggression. As an extension to the research that exists in the field, media entertainment habits included not only movie-viewing habits but also game-playing habits. Parental involvement with media included both parental involvement with their adolescents’ movie-viewing habits and game-playing habits.

The results of the multiple regression analyses reveal that the set of the predictor variables significantly predicted only the aggression legitimate attitude. The relationship between the predictor variables and the attitude that aggression is legitimate and warranted is statistically significant from zero ($R = .46$, $F(6,129) = 5.86$, $p < .000$). The squared multiple $R$ indicates that 21.4% of the variance is accounted for in the prediction. In this prediction, parental involvement with boys’ game-playing habits, parental involvement with boys’ movie-viewing habits, and game repertoire variables each account for the largest amount of variance (standard coefficients: -.25, -.22, and -.16 respectively). All three negatively relate to the Aggression Legitimate subscale, indicating that the more parents are involved with their adolescents’ media entertainment habits and the less violent game repertoires the adolescents have, the less supportive the boys are of the attitude that aggression is legitimate and warranted.

These results speak strongly in support of the importance of parental involvement with adolescents’ movie-viewing and game-playing habits as a moderating variable in the relationship between exposure to media violence and subsequent antisocial behavior. The more active movie mediation parents provide (discussing and coviewing), the less
supportive the boys are of the attitude that aggression is necessary and acceptable. Several studies came to the same conclusion (Austin, 1993; Horton & Santogrossi, 1978).

These results also support our explanation of the ANOVA result obtained for the comparison of attitudes between those boys whose parents are involved with their adolescents' movie-viewing habits and those boys whose parents show little or no involvement. Absence of a statistically significant difference between the groups in that analysis was attributed to dichotomizing the parental movie mediation variable. The results of this analysis reveal that parental involvement, when entered as a continuous variable, independently and significantly predicts the aggression legitimate attitude in adolescent boys.

As mentioned before, none of the published studies reports on the role of parental involvement with their adolescents' game-playing habits. However, similar to parental movie mediation, parental involvement with game-playing habits is acknowledged to be important (Funk & Buchman, 1995). The results of this study demonstrate that parental involvement with their boys' game-playing habits is a strong predictor of the aggression legitimate attitude in adolescents. The results suggest that boys whose parents exert more supervision over their adolescents' game-playing habits as well as their game choices have less favorable attitudes and beliefs that aggressive problem solving is appropriate and warranted. A possible explanation could be that, by restricting the time spent playing and by controlling over the game choices, parents reduce both their adolescents' time exposure to violent scenes and accessibility of violence in the games, which is, as discussed in the previous research question, might be crucial in the process of integrating violent problem solving into the players' conception of and expectation about reality.
There is little disagreement about the existence of the effect of media violence on children's and adolescents' levels of antisocial behavior; however, there is an active debate regarding the magnitude of this effect (Hughes & Hasbrouck, 1996). As mentioned, the meta-analyses show that relationship between exposure to television violence and antisocial behavior in all observations combined is .10, and such a magnitude is referred to as small because it account for about 10% of the variance in the criterion variable (Paik & Comstock, 1994).

The present research reveals that the amount of variance accounted for in the aggression legitimate attitude by the predictor variables is 21.4%. Such a magnitude is considered to be in the range from small to moderate (Paik & Comstock, 1994). The increase in the amount of variance accounted for could be attributed to the inclusion of game-playing habits in the prediction equation. The present result, thus, represents a new finding which indicates that violent video/computer games is another medium that plays an essential role in cultivating attitudes favorable toward use of violence.

Although most of the variance (78.6%) is left unaccounted, 21.4% that is accounted for in the prediction should not be disregarded because even a small effect is socially consequential, particularly in the case of aggression and violence. Nowadays it is widely accepted that antisocial behavior does not have a single cause, but, rather, it is a result of multiple influences. Therefore, it is very important to identify a range of influences because even if their individual contribution does not seem to be significant, when combined with other influences, they can add substantially (Hughes & Hasbrouck, 1996).

The fact that much of the variance is not accounted for in the prediction suggests
that other predictor variables should be looked for. These could include both adolescents' other media uses such as music videos and lyrics, and environmental variables such as family, school, peer groups and community variables. Based on the results of the present research, which reveals that parental involvement with media entertainment habits is crucial, it can be suggested that direct parental communication about behaviors and attitudes toward violence can also contribute significantly to the development of attitudes unfavorable toward use of violence. This is supported in a recent study by Orpinas and Murray (1999) who found a strong relationship between adolescents' aggression scores and adolescents' perceived parental support for fighting. Those students who perceived that their parents were strongly disapproving of use of violence scored significantly less on measures of aggressive behavior.

To conclude, this study reveals a moderate and significant relationship between the attitude that aggression is legitimate and the set of predictor variables. The results suggest the importance of parental involvement with both movie-viewing and game-playing habits as well as game repertoire in predicting the aggression legitimate attitude. Since most of the variance is left unaccounted, a variety of other predictor variables should be investigated.
CHAPTER 6

CONCLUSIONS, LIMITATIONS, IMPLICATIONS, AND RECOMMENDATIONS

Overview

This chapter will present the conclusions of the study. It will also address both the limitations and the implications of this research. Particularly, recommendations for violence-prevention programs as well as media-awareness classes will be provided. In addition, this chapter will include recommendations for the future research.

Conclusions

The following represents a summary of the major findings:

1. The reliability measures of the ABRA scale as well as the PMR scale used in the present study were adequate. The factor analysis of the ABRA scale showed that the scale can be used both as a unidimensional and as a multidimensional construct. The analysis of the PMR structure also confirmed that the PMR is an internally consistent measure of perception of movie reality by adolescent boys from a wide age-range and from varying backgrounds;

2. Adolescent boys spent a significant amount of time with media. Watching movies is a popular leisure time activity among boys aged 13-16. The number of movies adolescents watched on TV, video, and movie theatre varied from 0 to 15 movies a week, with an average of 5.2. Evaluation of the adolescents’ movie repertoires by two independent raters confirmed that adolescent boys watched movies with substantial amount of violence. In addition, 80% of the boys believed that they watched more movies with violent content while only 19% believed that they watched more movies without
violent content. Moreover, 34% of the respondents reported that they enjoyed watching movies with violent content very much, 53.2% enjoyed it much, 11.8% enjoyed it "not much," and none of the boys completely disliked watching movies with violent content.

Parental involvement with their adolescents' movie-viewing habits is relatively limited. Based on the participants' self-reports, only 18.7% parents coviewed movies with their adolescents, less than half of the parents (44.8%) sometimes coviewed, 31.0% coviewed "not often," and 5.5% never coviewed movies. In addition, only 12.8% of the parents often discussed movies with their adolescents, 38.4% sometimes discussed, 35% discussed "not often," and 13.8% never discussed movies. Moreover, the majority of the parents did not set any limits on watching movies (52.7%), 11.8% of the parents regularly set limits on movie watching, and 35.5% sometimes set limits;

3. Video/computer games is another predominant medium among adolescent boys aged 13-16. The majority of the adolescent boys (94.5%) played either video or computer games, as opposed to 5% who did not play. Adolescents spent on average from 8 to 10 hours per week playing games, with some adolescents spending up to 41 hours per week of game playing.

The findings indicated that parental involvement with their adolescents' game-playing habits is very limited. Based the adolescents' self-reports, 73.9% of parents did not control over their adolescents' game choices, 19.2% sometimes controlled, and only 6.9% of the parents regularly exerted control. In addition, the majority of parents (54.7%) did not set any limits on video/computer game playing, 26.1% sometimes set limits, and only 19.2% regularly set limits;
4. The range of scores on the ABRA scale indicated pronounced variability in the attitudes and beliefs of adolescent boys regarding aggression. The notions that aggression is legitimate and that aggression brings power and status were scored in the moderate range. However, the results suggested a high level of agreement with the belief that one should not intervene in fights, indicating a hands-off attitude about helping victimized peers;

5. Heavy and light viewers of movie violence did not differ on a statistically significant level in any dimension of their attitudes about aggression. Real and fiction perceivers, as well, did not differ in their attitudes. As expected, those boys whose parents were relatively more involved with their movie-viewing habits scored higher on the ABRA scale than those boys whose parents exerted little or no involvement. This difference, however, was not statistically significant. The absence of a statistically significant difference was attributed to the dichotomizing of the parental involvement variable. Surprisingly, heavy and light viewers of movie violence did not differ on a statistically significant level on the Stay Out subscale which was explained by a process of desensitization on a grand scale;

6. Adolescents with “violent” game repertoires were significantly more supportive of the attitude that aggression is legitimate and warranted, as compared to those whose repertoires were ranked as containing little or no violence. No differences were found regarding both the attitude that aggression brings power and status and the attitude that one should not intervene in fights;
7. A moderate and statistically significant relationship was found between the attitude that aggression is legitimate and warranted and a set of predictor variables that included exposure to movie violence, perception of movie reality, parental involvement with movie-viewing habits, amount of time spent playing video/computer games, parental involvement with game-playing habits, and game repertoire.

The results demonstrated that parental involvement with their adolescents’ movie-viewing habits, parental involvement with their adolescents’ game-playing habits, and game repertoire were the strongest predictors of the aggression legitimate attitude. The more parents were involved with their adolescents’ game-playing and movie-viewing habits and the less violent game repertoires the adolescents had, the less supportive the boys were of the attitude that aggression is legitimate and warranted.

Implications and Recommendations

It is believed that interventions focused on changing attitudes about aggression would enhance the effectiveness of violence prevention programs (Shapiro et al., 1998). The results of this research, thus, have several implications for both violence-prevention programs and media-awareness classes.

First, the results indicate that adolescent boys have a high level of agreement with the attitude that one should not intervene in fights. As discussed before, it is possible that this attitude is a result of the process of desensitization on a grand scale (Woodfield, 1989). To sensitize adolescents to the frailty of human body and life, it seems important to change this pervasive hands-off attitude about helping victimized peers. In line with the suggestion of Shapiro et al. (1997) about the role of their tool that measures attitudes
toward violence and guns, it is recommended that the ABRA scale should play a useful role in preventive interventions. Using the items of the *Stay Out* subscale as points for discussion would provide adolescent boys with an opportunity to reconsider their attitudes and beliefs about passive acceptance of violence in the society.

Although it is not fully known why adolescent boys are so reluctant to help their peers who are being victimized, the moderate correlation between the *Aggression Legitimate* and the *Stay Out* subscales could give a partial explanation (Vernberg et al., 1999). According to Vernberg et al. (1999), “if an individual believes that the target of aggression is getting what he/she deserves, intervention may be viewed as unwarranted” (p. 394). This explanation suggests that making a meaningful change in the passive acceptance of violence among adolescent boys would also require counteracting both the attitude that aggression is legitimate and that aggression brings power and status. Thus, discussion of all items on the ABRA scale could be effectively used in the preventive efforts.

Second, since violence is determined by numerous factors, it is obvious that effective violence-prevention strategies should include multiple components that influence adolescents in their daily lives such as family, peers, and community. According to Coie and Jacobs (1993), school-based violence prevention programs that include parental involvement have more chances for a positive impact on children’s and youth’s attitudes and behavior.

The results of this study demonstrate that parental involvement with both movie-viewing and game-playing habits is crucial in reducing the negative impacts of media on adolescent boys. At the same time, the results confirm that parental involvement with
their adolescents' media entertainment habits is, on average, very limited. Therefore, it is recommended that parents should be educated to become more involved with their adolescents’ uses of media. They should be encouraged, wherever and whenever possible, to coview and discuss movies with their boys, voicing disapproval of violence that is displayed on the screen as a way to resolve conflicts in real life. In addition, parents should be instructed to provide more control over their adolescents’ game choices and more supervision over their adolescents’ time spent playing games. Although all adolescent boys would benefit from higher levels of parental involvement, boys who were ranked as having game repertoires with high levels of violence would require special attention. This study shows that adolescent boys spent an enormous amount of time with media in general, which might cause a displacement effect. Thus, parents should be encouraged to identify alternative recreational activities for their children.

Finally, it is clear that not all of the working parents would be able to provide the necessary supervision over their adolescents’ media entertainment habits due to demanding time requirements of the labor market. Therefore, media awareness classes should additionally focus on developing critical viewing skills as well as on educating students to become more aware of the negative impacts of violent video and computer games.

It is recommended that teachers should involve adolescent boys in discussions of popular movies, particularly those with high levels of violence. Discussions should focus on values, moral reasoning, and social perspective taking. Such discussions might help youth understand that movie violence is different from real life violence, in that real life violence involves negative consequences for the aggressor, often long-term. It should be
brought to adolescent boys' attention both that real-life victims of violence and their families suffer and that there are effective nonviolent solutions to problems (Hughes & Hasbrouck, 1996).

Limitations

Outlined are several limitations to the study:

1. This research is an exploratory study, and thus the new findings should be interpreted carefully;

2. It may not be possible to generalize the results and discussions of the present study to all adolescent boys because this study did not use statistically random sampling but rather cluster sampling;

3. The present research is a correlational study, a design which does not allow causal analyses. Cause-effect inferences should not be made in interpreting the results.

Recommendations for Future Research

First, the present research was primarily exploratory. There are several new findings that would require further investigation. The replication of this study, particularly with an increased number of participants in the Canadian context, is recommended. Similar investigations will further contribute to the field by either confirming or disconfirming the findings obtained in this study.
Second, given the multiple causes of antisocial behavior, the number of possible predictors of adolescent boys' attitudes about aggression should be extended. For example, it is believed that adolescent boys are also heavily exposed to other media such as music videos and lyrics (Hoberman, 1990). These media are recommended to be included in future studies. Also, based on the results of this research that suggest a crucial role of parental involvement with their adolescents' media habits, it is recommended that other aspects of parental involvement (i.e., direct communication about behaviors and attitudes) should be considered. Furthermore, a variety of other intervening variables in the relationship between media violence and antisocial behavior that were out of the scope of this study should be taken into account, particularly adolescent boys' identification with violent movie characters.

Third, it is believed both that attitudes toward violence are a product of cumulative experiences and that they take time to develop. A longitudinal study is, indeed, required to investigate the developmental correlates of adolescent boys' attitudes about aggression.

Finally, the present study was based on adolescents' self-reports; this is justified when boys' attitudes about aggression are measured. It makes sense that future studies additionally use parental reports on some measures. Parental reports would possibly validate the accuracy of adolescents' self-reports, particularly boys' movie-viewing and game-playing habits and their own involvement with their adolescents' media entertainment habits.
REFERENCES


Thank you for participating in this study. Since it is important to protect your anonymity, please do NOT sign your name or anything that would identify you on this survey. Complete this sheet by placing a X in the blank, filling in the blank (please print), or by circling your answer.

1. Age (years): __________

2. Ethnic origin:
   _____Caucasian; _____African Canadian; _____First Nations;
   _____Indo Canadian/other Asian Canadian; _____Hispanic Canadian;
   _____other (please specify) _______________________________________

3. I live with: _____both biological parents;
   _____one biological parent and one other adult;
   _____one biological parent only;
   _____two adults who are not my biological parents;
   _____one adult who is not a biological parent
   _____other (please specify) _______________________________________

APPENDIX 2

Media Entertainment Questionnaire

Instructions: Please complete this sheet by circling your answer or filling in the blank. Please print and please do not abbreviate. For questions 5 and 9 please make sure that you list 3 movies and 3 games.

1. How many TV movies (including cable/pay channels) do you watch in an average week?
   0 1 2 3 4 5 6 7 8 more (specify)

2. How many videocassette movies do you watch in an average week?
   0 1 2 3 4 5 more (specify)

3. How often do you go to the movie theatre (cinema)?
   twice a month  once a month  less often  never  other (specify)

4. Please choose 3 of the movie genres (types) you prefer watching:
   ____ action;  ____ science fiction;  ____ western;  ____ comedy;  ____ crime-drama;
   ____ horror;  ____ drama;  ____ romance;  ____ musical;  ____ war;
   ____ others (please specify)

5. Please name 3 of your current favorite movies that you watched on TV, video or movie theatre. It is very important for the study that you name 3 movies (please print):
   1. _________________________________________________________________
   2. _________________________________________________________________
   3. _________________________________________________________________

6. How much do you enjoy watching movies with violent content?
   very much  much  not very much  not at all
7. Do you think you watch more movies with violent content than movies without violent content?
   Yes  No

8. Do you play video/computer games?
   Yes  No
If yes:
On a typical school day how many hours do you spend playing video or computer games?
   0-½ hour  ½-1 hour  1-1 ½ hours  1 ½-2 hours  more (please specify)

How many hours do you spend playing video/computer games on a typical Saturday?
   0-½ hour  ½-1 hour  1-1 ½ hours  1 ½-2 hours  more (please specify)

How many hours do you spend playing video/computer games on a typical Sunday?
   0-½ hour  ½-1 hour  1-1 ½ hours  1 ½-2 hours  more (please specify)

9. Name 3 of your current favorite video or computer games. Please, indicate in the brackets whether it is a computer or video game (please print):
   1. 
   2. 
   3. 

10. Please describe the sort of a game you like playing:

11. How often do you co-view movies with a parent (parents)?
   Often  Sometimes  Not often  Never
12. How often do you discuss movies with a parent (parents)?

<table>
<thead>
<tr>
<th></th>
<th>Often</th>
<th>Sometimes</th>
<th>Not often</th>
<th>Never</th>
</tr>
</thead>
</table>

13. Does (do) your parent(s) set limits on movie viewing?  Yes  Sometimes  No

14. Does (do) your parent(s) control over your video/computer game choices?  Yes  Sometimes  No

15. Does (do) your parent(s) set limits on game playing?  Yes  Sometimes  No
Perception of Movie Reality Scale

Instructions: Please read the statements and indicate your response to them by circling one of the numbers next to each statement on a continuum ranging from 0 - not real at all to 10 - very real.

Please note: When asking “how real” and “how real to life” I would like to know whether, in your opinion, movie characters, the problems they have and the way they solve those problems are similar to people, problems and situations experienced in your life, your friends’ lives or in the lives of people you know.

<table>
<thead>
<tr>
<th>not real at all</th>
<th>very real</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
</tbody>
</table>

1. How real to life are most movie characters? 0 1 2 3 4 5 6 7 8 9 10
2. How real to life are the problems most movie characters have? 0 1 2 3 4 5 6 7 8 9 10
3. How real to life are the ways in which most movie characters solve those problems? 0 1 2 3 4 5 6 7 8 9 10
4. How real are the characters in your current favorite movie? 0 1 2 3 4 5 6 7 8 9 10
5. How real are the problems the characters in your current favorite movie have? 0 1 2 3 4 5 6 7 8 9 10
6. How real are the ways in which the characters in your current favorite movie solve those problems? 0 1 2 3 4 5 6 7 8 9 10
7. How real is your current favorite movie character? 0 1 2 3 4 5 6 7 8 9 10
8. How real are the problems your current favorite movie character has? 0 1 2 3 4 5 6 7 8 9 10
9. How real are the ways in which your current favorite movie character solves those problems? 

10. How real is the way your current favorite movie character lives?
Attitudes and Beliefs Regarding Aggression Scale

**Instructions:** Please read the statements below and indicate your response to them by circling one of the numbers next to the statement (1- don’t agree at all; 2- agree a little; 3 -agree a lot; 4 - completely agree).

<table>
<thead>
<tr>
<th>Statement</th>
<th>don’t agree at all</th>
<th>agree a little</th>
<th>agree a lot</th>
<th>completely agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s okay for students to fight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>It’s okay for students to make fun of other students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>When two students are fighting each other, it’s okay to cheer for them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sometimes a student deserves to be pushed around by other students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sometimes it’s okay to be a bully.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>It’s important for students to show they are ready to fight anyone who picks on them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Students who get picked on or pushed around usually did something to deserve it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>When two students are fighting each other, it’s all right to stand there and watch.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Bullies get what they want from other students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>It makes a student feel big and tough to be a bully.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Students can make other students do what they want by yelling at them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Students get respect when they boss other students around.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Students can get what they want from other students by fighting with them.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When two students are fighting each other, other students should stop them.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When a student is getting picked on, other students should try to stop it.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When two students are fighting each other, other students should stay out of it.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

It is wrong to try to stop a fight between two students.  
<table>
<thead>
<tr>
<th>Agree Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't agree at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Dear Participant:

My name is Olga Novozhylova, and I am a graduate student in the Department of Educational Psychology and Leadership Studies at the University of Victoria. I am working on my MA thesis, Media entertainment and adolescents’ attitudes about aggression, under the supervision of Dr. C. Brian Harvey (250-721-7856). Research of this type is very important because it will provide information necessary for the improvement of violence-prevention programs.

I am looking for participants between the ages of 13 to 16. If you agree to participate, you would be asked to fill in the questionnaires concerning your media entertainment habits (movies you watch and video/computer games you play), perception of television reality, and attitudes toward violence. This would require about 20 minutes of your time.

I would like to ensure that your participation in this study is completely voluntary. You may choose not to participate in the study, without negative consequences whatsoever. I would like you also to know that your results in the study will be completely anonymous. You will not be asked to sign your name on any part of the survey. Confidentiality will be protected by guarantee that after the data are analyzed, all the questionnaires will be destroyed. Only the researcher will have access to the data in the whole process of investigation.

For information on this project, please do not hesitate to contact me at (250) 472-2153. You may also e-mail me at onov74@hotmail.com. If you would like to participate in this study, please sign below. Thank you very much for your time.

Sincerely,
Olga Novozhylova

I have read the consent form and I am aware that my participation in this study is completely voluntary and I may quit at any time. I am also aware that the results of this study are completely anonymous and confidential. I would like to participate in this study.

Name (print): ____________________________________________________________________________
Signature: ____________________________________________________________________________
Date: ________________________________________________________________________________

A COPY OF THIS CONSENT WILL BE LEFT WITH YOU, AND A COPY WILL BE TAKEN BY THE RESEARCHER
Parental Consent Form

Dear Parent(s)/Guardian(s):

My name is Olga Novozhylova (250-472-2153), and I am a graduate student in the Department of Educational Psychology and Leadership Studies at the University of Victoria. I am working on my MA thesis, Media entertainment and adolescent boys' attitudes about aggression, under the supervision of Dr. C. Brian Harvey (250-721-7856). This study has been approved by the Ethical Review of Human Research Committee at the University of Victoria. I have also obtained the permission to conduct this study from the superintendent of your School District and the principal of your child's school.

I am looking for participants between the ages of 13 to 16. Participants must be willing to fill in the questionnaires concerning their media entertainment habits, perceptions of television reality, and attitudes about aggression. This will require about 25 minutes of their time.

Research of this type is very important because it will provide information necessary for the improvement of violence-prevention programs. The study will take place during the school time, in the classrooms. I would like to ensure you that your child's participation in the study is completely voluntary, anonymous, and confidential.

On October 22-23, 2000, I presented my research project to 13-16 year old boys in your son's school. Your child has agreed to participate in the study. By this letter I would like to inform you of this study and of the decision of your son.

If you allow your child to participate in this study, you do not have to sign this permission slip. In case you DO NOT want your child to participate in this study, please complete the form below, and sign it. Please keep one copy of the consent for your records, and send another copy with your child to school at the earliest convenient opportunity.

Thank you very much for responding to my request,

Olga Novozhylova.

----------------------------------------------------------------------------------------------------------------------

I, _____________________________________________________________,  

do not allow my child, ____________________________________________,  

(name)

to participate in the study, Media entertainment and adolescent boys' attitudes about aggression, conducted by Olga Novozhylova under the supervision of Dr. C. Brian Harvey.

Signature _____________________________________________________

Date __________________________________________________________
Histogram of the Aggression Legitimate Subscale
APPENDIX 8

Histogram of the Aggression Pays Subscale
APPENDIX 9

Histogram of the Stay Out Subscale
Surname: Novozhylova
Given Names: Olga

Place of Birth: Izmail, Odessa region, Ukraine

Educational Institutions Attended:

University of Victoria 
Central European University 
Izmail State Pedagogical Institute

Degrees Awarded:

M.Sc. Central European University 1999
B.Ed. (Honours) Izmail State Pedagogical Institute 1997

Honours and Awards:

2000 International Peace Scholarship, USA
1999 Open Society Institute Network Scholarship, Hungary
1999 CEU Research Grant, Hungary
1998 Open Society Foundation Scholarship, Ukraine
UNIVERSITY OF VICTORIA PARTIAL COPYRIGHT LICENSE

I hereby grant the right to lend my thesis to users of the University of Victoria Library, and to make single copies only for such users or in response to a request from the Library of any other university, or similar institution, on its behalf or for one of its users. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by me or a member of the University designated by me. It is understood that copying or publication of this thesis for financial gain by the University of Victoria shall not be allowed without my written permission.

Title of Thesis:

Media Entertainment and Adolescent Boys' Attitudes About Aggression: An Exploratory Study

Author

Olga Novozhylova

June 29, 2001