CE ARTICLE: 2 CE CREDITS

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The Relationship between Virtual & actual Aggression: Youth Exposure to Violent Media

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After studying this article, participants should be better able to do the following:

1. Identify the extent to which children and young adults are exposed to violent media.
2. Have a deeper understanding of the adverse nature of violent media in the sample provided.
3. Recognize the psychological theories most relevant to the understanding of attitudes toward aggression.

KEY WORDS: exposure to violence, violent video games, aggression, adolescents, religion
TARGET AUDIENCE: Psychological professionals
PROGRAM LEVEL: Basic
DISCLOSURE: The authors have nothing to disclose.
PREREQUISITES: None

In the current research investigation, an effort was made to determine whether there was a relationship between virtual aggression and actual aggression in youth exposed to the various forms of violent media. The participants in the current study consisted of one hundred and twenty-seven (127) high school adolescents between the ages of 14 and 17. They were interviewed about their exposure to violence, beliefs about aspects of aggression, frequency of participation in verbally aggressive or physically aggressive acts and constructive extracurricular activities, and aspects of their exposure to virtual aggression in the form of violent media. Findings revealed that *Grand Theft Auto*™ was positively correlated with total aggression, physical aggression, and verbal aggression. Results indicated that a history of neglect was correlated positively with aggression, and that the amount of videogame play was correlated positively with verbal aggression. Participation in constructive extracurricular activities was correlated negatively with lifetime totals of aggressive acts. Finally, multiple regression analyses indicated that active involvement in a religious activity, such as church, explained significant variability in total aggression. The findings suggest that there is a relationship between exposure to violent media and aggression. These findings suggest that future research should attempt to address the etiology of the relationships identified and further examine the predictive qualities of media type and of religious affiliation and aggression.

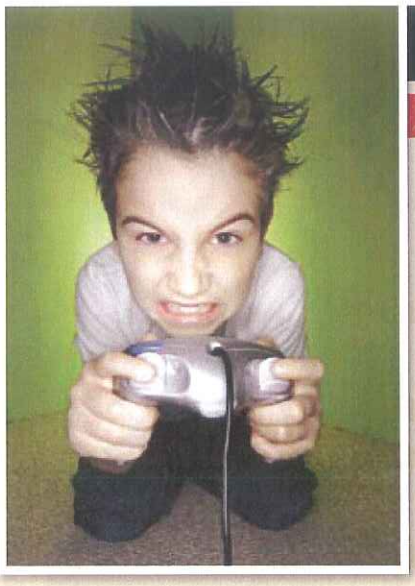


Table 1

Demographic Characteristics of Sample Population (n = 127)

Age	x = 17.2	SD = 0.83
Gender		
Male	50	(39.4%)
Female	77	(60.6%)
Education Level		
9th Grade	1	(0.8%)
10th Grade	17	(13.4%)
11th Grade	46	(36.2%)
12th Grade	63	(49.6%)
Ethnicity		
Caucasian	95	(74.8%)
African American	12	(9.4%)
Hispanic	12	(9.4%)
Asian American	7	(5.5%)
Native American	1	(0.8%)

Table 2

Correlations Among Aggression Measures

	PA	VA	A	H	LAQ	LHA	LSRP
PA	.80**	.57**	.82**	.67**	.53**	.64**	-.62**
VA		.28**	.58**	.30**	.67**	.67**	-.54**
A			.30**	.18*	.16	.33**	-.32**
H				.51**	.30**	.50**	-.53**
LAQ					.31**	.28**	-.35**
LHA						.47**	-.53**
LSRP							-.57**

*Note: * p < .05; ** p <. 01.*

PA: Physical Aggression
VA: Verbal Aggression
A: Anger
H: Hostility
LAQ: Legitimacy of Beliefs about Aggression Questionnaire
LHA: Lifetime History of Aggression Questionnaire
LSRP: Levenson Self-Report Psychopathy Scale

Table 3

Correlations Among Demographics

	FIH	CHN	CHT	CHA	CHB	LHA
FIH	.14	-.19*	.12	-.36**	-.02	-.12
CHN		-.08	-.30**	-.12	-.03	-.15
CHT			.43**	.70**	.49**	.18*
CHA				.38**	.16	.15
CHB					.31**	.09
LHA						.01

*Note: * p < .05; ** p <. 01.*

MIH: Mother in Home
FIH: Father in Home
CHN: Childhood Experiences -Childhood History of Neglect
CHT: Childhood History of Trauma
CHA: Childhood History of Abuse
CHB: Childhood History of Bullying
LHA: Lifetime History of Aggression Questionnaire

"Violent media increases aggression by teaching observers how to aggress by priming aggressive cognitions, increasing arousal, or creating an aggressive affective state."

▲ MCT image by Laura Pearl

Aggression is a form of behavior that involves the intention of harming or intimidating another individual (Anderson & Bushman, 2001). In essence, individuals learn aggressive responses in much the same manner as they learn other social behaviors, either by observation or through direct experience (Anderson & Bushman, 2002; Bandura, 1978). This assertion of social learning theorists was demonstrated in Bandura, Ross, and Ross's (1961; 1963) famous **Bobo doll experiments** where children imitated aggression toward dolls just after they had witnessed an adult being aggressive toward the dolls, either in person or on film (Hayes, Rincover, & Volosin, 1980). Children are exposed to ever-increasing amounts of actual violence in their communities as well as virtual violence in the media (Hill, Levermore, Twaite, & Jones, 1996). We as a scientific community have moved away from the parsimonious explanation of learned behavior—to our detriment. We constantly seek elaborate explanations to the reasons why individuals commit violent and aggressive acts when we should simply invest in the elegant explanation that social learning theorists have already provided.

The children involved in the first of the famous experiments and who observed models in person acting aggressively "later reproduced a good deal of physical and verbal aggression (as well as non-aggressive responses) substantially identical to that of the model," and this was "in contrast to the subjects who were exposed to non-aggressive models, had no previous exposure to any models, and who only rarely performed such responses" (Bandura, Ross, & Ross, 1961, p. 580). Moreover, Bandura and colleagues' (1963) subsequent study, which elaborated on the first study by exploring the effect models on film would have on observers, showed that the effects found in the first study generalize to human and cartoon models. The effect was such that those individuals who witnessed the aggressive behavior on film "exhibited nearly twice as much aggression than did subjects in the control group who were not exposed to the aggressive film content" (Bandura, Ross, & Ross, 1963, p. 9).

Moreover, "violent media increases aggression by teaching observers how to aggress by priming aggressive cognitions, increasing arousal, or creating an aggressive affective state" (Anderson & Bushman, 2001, p. 355; Eron et al., 2003; Panee & Ballard, 2002). This is a critical finding; it implies that individuals are delivered a set of norms to follow in the act of teaching someone to commit virtual violence and aggression. Approximately 75% of programming aimed toward children has been found to contain violence, and the majority of these programs do not show the reality of the serious consequences that would most likely result if these events occurred in real life, such as pain, physical harm, or even death (Wilson et al., 2002). Anderson and Dill (2000) conducted a study examining the relationship between video games and aggression, and their results indicated that individuals who were allowed to play violent video games subsequently showed more heightened aggression in a later laboratory task. After playing the game *Wolfenstein 3D*™, heightened aggression was defined as the "intensity and duration of noise blasts the participant chooses to deliver to their opponent" (Anderson & Dill, 2000, p. 15).

Aggression viewed on television also tends to be associated with an increase in aggression on the part of the viewer, and this increase is thought to have a much greater effect on children (Hogben, 1998). Additionally, this effect is shown more strongly in "societies with ready access to lethal weaponry" (Hogben, 1998, p. 239). Hogben's (1998) findings also showed that individuals who stopped viewing television, and as a result stopped being exposed to televised aggression, showed a 10% decrease in aggressive

behaviors. This finding suggests that continuous exposure or chronic exposure, such as the type documented in video game play, produces a different and stronger result than occasional exposure. As a result of this study, Hogben (1998) concluded that exposure to televised violent media seems to play a "consistent and practically significant role in predicting viewer aggression" (p. 239). The findings regarding aggression, which have been reported in the literature, have led others to assert that exposure to violent media serves to increase aggression through cueing cognitive effects (Anderson & Bushman, 2002). These cues, or scripts as they are sometimes referred, are stored and may be enacted when an individual is presented with a situation they feel may merit aggression (Shanifar & Kupersmidt, 2001; Zelli, Dodge, Lochman, & Laird, 1999).

Viewer's motives may also play a role in the relationship between exposure to violent media and aggression. Haridakis (2002) examined this possibility and noted that when an individual was exposed to violent media for the sole purpose of entertainment, they tended to behave more aggressively. In addition, in college-aged individuals with a mean age of 20 years, Haridakis (2002) declared that the amount of exposure to violent media had a positive correlation with aggression, including aggressive behavior and verbal aggression. As a result, he concluded that it would be necessary to determine specific viewer characteristics that are associated with exposure to violent media and aggressive behavior, something that should be addressed in future research (Haridakis, 2002).

Viewer motivation is also proven to be a factor in social learning from violent media. This is further evidenced by the fact that the Department of Defense, and specifically the United States Army, has developed video games that train individuals to become soldiers, with an emphasis on using a variety of violent weaponry (Kennedy, 2002). These videogame tools are user friendly and are even available for free download off the Internet. Anyone with access to a computer with Internet service can download the game called *America's Army*™, rated "T"™ for Teen, free of charge from various Web sites. Even more interesting is how the player essentially becomes the soldier appearing in the game, and subsequently has to pass basic training and marksmanship courses before they are permitted to go out on virtual maneuvers. This requires the player to inherently become the virtual image they see in the game, further blurring boundaries and contributing to the realistic nature of the exercise.

Table 4

Correlations Among Direct Exposure to Violence and the Aggression Measures

	VVA	AQ	LAQ	LHA	LSRP
VVA	.11	.30**	.25**	.40**	-.19*
AQ		.21*	-.06	.36**	-.11
LAQ			.53**	.64**	-.62**
LHA				.47**	-.53**
LSRP					-.57**

Note: * $p < .05$; ** $p < .01$.

DEV: Direct Exposure to Violence
VVA: Being a Victim of a Violent Acts
AQ: Aggression Questionnaire
LAQ: Legitimacy of Beliefs about Aggression Questionnaire
LHA: Lifetime History of Aggression Questionnaire
LSRP: Levenson Self-Report Psychopathy Scale

Table 5

Correlations Among Videogames

	MTK	REV	FPS	GTA	AVP	LAQ	LHA	LSRP
MTK	1.0	.31**	.29**	.52*	.19*	.09	.10	-.09
REV			.52**	.32*	.15	-.02	-.02	-.09
FPS				.25**	.20*	.11*	-.03	-.08
GTA					.18*	.27**	.24**	-.27**
AVP						.05	.03	-.06
LAQ							.47**	-.53**
LHA								-.57**
LSRP								

Note: * $p < .05$; ** $p < .01$.

MTK: Mortal Kombat™
REV: Resident Evil™
FPS: First Person Shooter Games
GTA: Grand Theft Auto™
AVP: Amount of Videogame Play
Aggression Measures (LAQ, LHA, and LSRP)

Table 6

Correlations Among Videogames

	REV	FPS	GTA	AQ	PA	VA	A	H
MTK	.31*	.29**	.52**	.07	.16	.18*	-.13	-.11
REV		.52**	.32**	-.03	.03	.17	-.16	-.13
FPS			.25**	.15	.11	.24**	-.05	.08
GTA				.19*	.26**	.18*	-.01	.07
AQ					.80**	.57**	.82**	.67**
PA						.28**	.58**	.30**
VA							.30**	.18*
A								.51**
H								

Note: * $p < .05$; ** $p < .01$.

MTK: Mortal Kombat ™
REV: Resident Evil ™
FPS: First Person Shooter Games
GTA: Grand Theft Auto™
Aggression Questionnaire (AQ and the subscales PA, VA, A, and H)

Virtual Training

Other areas of industry in the United States have found that video games are useful tools for training individuals to perform their jobs more effectively and to practice in ways not previously possible. Pilots and astronauts are often trained using games or virtual simulators in order to gain the required knowledge and expertise before they are permitted to conduct their jobs with the general public. In these virtual training simulations, individuals are faced with equipment malfunctions in order to be prepared for these situations if they were to happen to them in real life. Gopher, Wiel, and Bareket (1994) conducted a study to determine whether or not skills obtained through a computer game trainer would transfer to flight. They acknowledged that "although the elements and the parameters of the computer game were physically remote from those of the flight situation, the game provides a useful training context for developing flight-relevant skills." The results of this study indicated that **skills do transfer from computer simulations to real life**: the pilots who were trained through computer games showed significantly better performance on their first flights than those not trained using video games (Gopher, Wiel, & Bareket, 1994). In fact, their skill level was superior. Studies show that we readily accept the notion that positive skill attribution from virtual training is possible, but doubt negative skill attribution from negative interactive games. The belief that aggression is a legitimate behavior choice has led individuals to behave aggressively, while at the same time misinterpreting the benefits they will gain from their aggressive actions (Zelli, Dodge, Lochman, & Laird 1999).

Demographic Variables Related to Aggression

The following factors have also been noted as contributors to adolescent delinquency: divorced or single parents who leave the child alone a great deal, in addition to a father's prolonged absence; lack of male role models; and lack of emotional support (Baer, 1999). These factors lead to a lack of attachment to parents on the part of the children, as well as parental lack of control and supervision over their children (Scholte, 1999). Many of these adolescents have a peer group that includes deviant individuals. Also, Anderson and Bushman (2002) noted that "aggression-related beliefs significantly predict future levels of aggressive behavior and the source of such beliefs in children is often the family"(p. 36). Scholte (1999) noted that it is important for further investigation of "risk factors involved in the development of serious problem behavior in order for mental health professionals to provide effective treatment"(p. 17).

Although there are a great deal of debates related to aggression, one aspect about aggression is certain: Once an individual develops aggressive tendencies, he/she is prone to keep these tendencies for the rest of his/her life. This is the reason why early and chronic exposure can be so detrimental. Huesmann, Eron, Lefkowitz, and Walder (1984) conducted a longitudinal study that involved over 600 subjects who were evaluated for aggressiveness at age 8 and subsequently at age 30. They found that aggression is a stable construct; over 22 years, "the stability of aggression as a construct is about .50 for boys and .35 for girls" (Huesmann et al., 1984, p. 1131). They also noted that "it is easy for a youngster to justify aggressive solutions to problems by referring to norms for such behavior promulgated by the media and others" (Huesman et al., 1984, p. 1133). Futhermore, "the notion that violence in the media contributes to the development of aggression has been supported by recent meta-analyses of the data" (Paik & Cornstock, 1994, as cited in Browne & Hamilton-Giachritsis, 2005, p. 702). This is important to note due to the current nature of television programming.

Results from this study have implications for understanding the relationship between exposure to violent media and aggression. This is important because "knowledge about possible influences in the development of adolescent aggressive behavior eventually might prove useful in curbing aggression and more dangerous antisocial behavior" (Simons, Paternite, & Shore, 2001; Weisner & Silbereisen, 2003). Based on this review of the existing literature concerning exposure to violent media and aggression, it was hypothesized that there would be a relationship between exposure to violent media and aggression. It was hypothesized that the constructs of aggression, lifetime history of aggression, and psychopathy and legitimacy of beliefs about aggression would be interrelated constructs. We were most interested in whether exposure to violent media such as videogames increased our ability to predict aggression.

Participants

The sample for this study consisted of 127 participants from a local high school within the public school system in Central Florida, which included 50 males and 77 females. All participants were adolescents aged between 14 and 18 and were required to complete the six self-report instruments in the battery. Detailed characteristics of the obtained sample are reported in the Results section.

Measures

Six instruments were utilized in the current research investigation: the Exposure to Violent Media Questionnaire (Levermore, 2003); the Legitimacy of Aggression Questionnaire (Erdley & Asher, 1998); Levenson Self-Report Psychopathy Scale (Levenson, Kiehl, & Fitzpatrick, 1995); the Aggression Questionnaire (Buss & Perry, 1992); the Lifetime History of Aggression Questionnaire (Coccaro, Berman, Kavoussi, & Hauger, 1996); and the Children's Interview on Community Violence (Hill, 1991).

Exposure to Violent Media Questionnaire: The Exposure to Violent Media Questionnaire is a 30-item questionnaire designed by Levermore (2003) to assess an adolescent's amount and type of exposure to violent media.

Aggression Questionnaire: The Aggression Questionnaire (AQ) (Buss & Perry, 1992) assesses personality traits and beliefs related to different aspects of aggression including physical aggression, verbal aggression, anger, and hostility.

Legitimacy of Aggression Questionnaire: The Legitimacy of Aggression Questionnaire (LAQ) is a 16-item questionnaire originally designed by Erdley and Asher (1998) to measure children's beliefs about the legitimacy of aggression.

Levenson Self-Report Psychopathy Scale: The Levenson Self-Report Psychopathy Scale (LSRP) (Levenson, Kiehl, & Fitzpatrick, 1995) is a 26-item self-report inventory that provides statements that describe people's likes and attitudes.

Lifetime History of Aggression: Lifetime History of Aggression (LHA) (Coccaro, Berman, Kavoussi, & Hauger, 1996) is a nine-item scale designed to assess the frequency with which an individual is engaged in a number of verbally or physically aggressive acts.

The Children's Interview on Community Violence: Children's Interview on

Community Violence (Hill, 1991) is a measure consisting of 27 items that assess the level of exposure to violence that children have observed or experienced, as well as how violence was responded to by the child in his/her environment.

Procedure

Upon meeting the participants, the researcher briefly described what was involved in the study and obtained informed consent. The consent forms were filed separately from the questionnaire responses and demographic information, and thereafter each questionnaire was only identified by a participant number. These actions were taken in order to ensure complete anonymity.

Analyzing the data for the purpose of this study, which was to look at the relation between amount of exposure to violent media and self-reported aggression, was accomplished through correlational analyses between certain variables on the exposure to violent media questionnaire and the other measures utilized in this study. The researchers sought to determine the relationship between childhood experience of violence and aggression, demographics and aggression, violent video game play and aggression, and extracurricular activity and aggression. Finally, an examination of whether or not exposure or demographic variables could predict aggression was also conducted.

Results

Demographic Characteristics of the Sample

Of the 127 participants who took part in this study, all 127 provided answers to all of the questions regarding demographic information. Demographic characteristics of the obtained sample can be found in Table 1. The average age of the students sampled was 17 years, with the sample consisting of 1.6% of individuals aged 14, 0.8% of individuals aged 15, 15.0% of individuals aged 16, 44.1% of individuals aged 17, and 38.6% of individuals aged 18.

Of the students who participated in this study, 0.8% were in the ninth grade, 13.4% were in the tenth grade, 36.2% were in the eleventh grade, and 49.6% were in the twelfth grade. The ethnic backgrounds of the students were comprised of Caucasians (74.8%), African-Americans (9.4%), Hispanic Americans (9.4%), Asian Americans (5.5%), and Native Americans (0.8%).

Findings revealed that 2.4% of the participants reported a history of commitment placement, either in a juvenile detention facility or in an inpatient psychiatric hospital setting, while 97.6% did not report any such history. Only

Table 7

Correlations Among Extracurricular Activities and Videogames

	RA	AIC	MTK	REV	FPS	GTA
RA	.15	.17	.02	.04	.21*	-.08
RA		.56**	-.08	-.19*	-.25**	-.10
AIC			-.10	-.08	-.15	-.15
MTK				.31**	.29**	.52**
REV					.52**	.32**
FPS						.25**
GTA						

*Note: * p < .05; ** p <. 01.*

RA: Religious Affiliation
AIC: Active Involvement in Church
MTK: Mortal Kombat™
REV: Resident Evil™
FPS: First Person Shooter Games
GTA: Grand Theft Auto™

Table 8

Correlations Among Extracurricular Activities and the Aggression Questionnaire

	RA	AIC	AQ	PA	VA	A	H
RA	.15	.17	-.08	-.12	-.18*	.07	.05
AIC		.56**	-.29**	-.31**	-.21*	-.20*	-.09
AQ			-.23**	-.29**	-.24**	-.08	-.01
PA				.80**	.57**	.82**	.67**
VA					.28**	.58**	.30**
A					.30**	.18*	
H							.51**

*Note: * p < .05; ** p <. 01.*

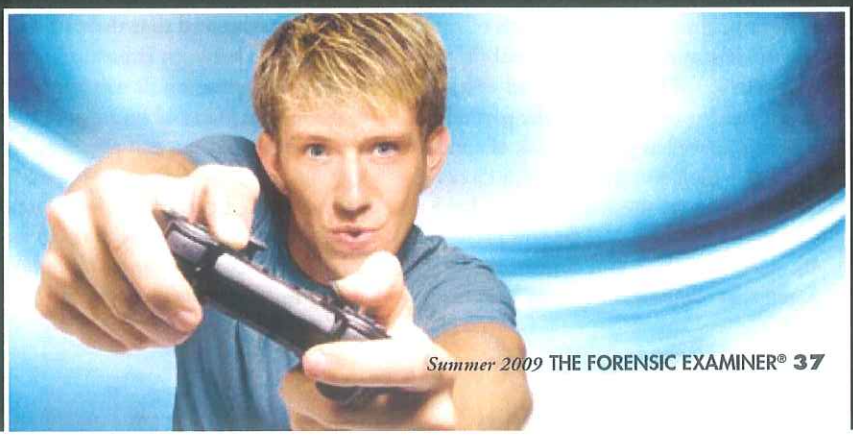
RA: Religious Affiliation
AIC: Active Involvement in Church
AQ and its subscales PA, VA, A, and H: Aggression Questionnaire

Table 9

Regression Analysis for Aggression by Active Involvement in Church and Direct Exposure to Violence

	Aggression	
Predictor	r2part	
Active Involvement in Church	.05*	-.21**
Direct Exposure to Violence	.08*	.18**

Note: The r2part is the proportion of variance accounted for when controlling for all other predictors. Betas represent unique effects in each step of analyses.
** p < .05. ** p < .01. N = 127.*



4.8% of the study population reported having violent charges listed on their respective juvenile justice face sheets, while 95.2 % did not report any such charges. Of the 4.8% of individuals who did have violent charges listed on their respective juvenile justice fact sheets, 1.6% were for assault, 0.8% were for resisting arrest with violence, 0.8% were for battery, 0.8% were for unlawful use of a weapon, and 0.8% were for violation of probation through violent means.

A majority (85.8%) of the study population reported having a mother living in the home, while 14.2% reported not having a mother living in the home. This is compared to 70.9% who reported having a father living in the home, while 29.1% reported not having a father living in the home. Only 5.5% reported having a parent with a history of incarceration, while 94.5% did not report any parental history of incarceration. Only 2.4% reported having a parent with a history of mental illness, while 97.6% did not report any parental history of mental illness. While 3.1% reported being neglected as a child, 96.9% did not report any history of neglect. Only 8.7% reported suffering some type of trauma during childhood, while 91.3% did not report any childhood history of trauma. While 6.3% reported being abused as a child, 93.7% did not report any childhood history of abuse. Finally, 9.4% reported having a childhood history of bullying, while 90.6% did not report any childhood history of bullying.

Of the individuals sampled, 42.5% reported playing videogames at home, while the other 57.5% did not. While 29.9% of individuals reported playing videogames alone, 52% reported playing videogames with friends, and 18.1% of the sample reported they did not play videogames at all. Of those who did report playing videogames, 54.3% reported playing videogames at someone else's home, while 45.7% did not. Twenty-six percent of the sample reported playing *Mortal Kombat*™, 11% reported playing *Resident Evil*™, 19.7% endorsed playing any number of first-person shooter games, 47.2% endorsed playing *Grand Theft Auto*™ (either *Grand Theft Auto III*™, *Grand Theft Auto: Vice City*™, or *Grand Theft Auto: San Andreas*™), and 45.7% endorsed playing any number of sports-related video games. Of those individuals who endorsed playing video games, they played an average of 1.9 hours per day, with a range of 1 hour to 20 hours. A total of anywhere from 693.5 to 7,300 hours of video game play were reported per year.

Of the individuals involved in this study, 53.5% reported a violent movie as the last movie they saw in the theater, and 33.1% reported a violent movie as the last movie they saw at home. A percentage of 24.4 of the individuals surveyed reported playing laser tag, and 14.2% reported playing paintball. Those individuals who endorsed playing paintball reported a range of playing the game one to four times per month, with an average of paintball play two times per month. Individuals also reported 4.2 hours of music listening per day, with a range of zero to 18 hours per day.

Relationships Between Aggression Measures

Correlational analyses were conducted to investigate the nature of the relationship between aggression as measured by the **Aggression Questionnaire by Buss and Perry**, and the

other measures utilized in this study including the **Lifetime History of Aggression Questionnaire (LHA)**, **Legitimacy of Beliefs about Aggression Questionnaire (LAQ)**, and the **Levenson Self-Report Psychopathy Scale (LSRP)**. The Aggression Questionnaire was significantly correlated with totals from the LHA, LAQ, and LSRP at r = .64, .53, and -.62, p <.01, respectively. Further correlation analyses were conducted to determine the relationship between the other measures in the study, including the LHA, LAQ, and LSRP. The LHA was significantly correlated with the LAQ and the LSRP at r = .47 and -.57 respectively, p<.01. The LAQ was also significantly negatively correlated with the LSRP at r = -.53, p<.01. All of these values can be found in Table 2.

Correlational analyses were also utilized to examine the nature of the relationships between the different aggression scales produced by the Aggression Questionnaire, including physical aggression, verbal aggression, anger, and hostility, and the different measures used in this study. Physical aggression showed a significant positive relationship with total aggression (r = .80), the LAQ (r = .67), and the LHA (r = .67), and a significant negative relationship with the LSRP (r = -.54), p<.01. Verbal aggression showed a significant positive relationship with total aggression (r = .57) and the LHA (r = .33), as well as a significant negative relationship with the LSRP (r = -.32), p<.01. Total anger showed a significant positive relationship with total aggression (r = .82), the LAQ (r = .30), and the LHA (r = .50), as well as a significant negative relationship with the LSRP (r = -.53), all with p<.01. Hostility showed a significant positive correlation with total aggression (r = .67), the LAQ (r = .31), and the LHA (r = .28), as well as a significant negative correlation with the LRSP (r = -.35), all with p<.01.

Demographics, Childhood Experiences, and Aggression

While examining specific demographic variables, childhood history of neglect was found to be positively correlated with childhood history of trauma (r (df)= .43, p<.01), childhood history of abuse (r = .70, p<.01), and childhood history of bullying (r = .49, p<.01). Moreover, the individuals in this study who reported experiencing trauma in their childhood showed a significant positive correlation with a childhood history of abuse (r = .38, p<.01), but not with a childhood history of bullying (r = .16, p<.01). In addition, those who reported being abused as children showed a significant positive correlation with a childhood history of bullying (r = .31, p<.01). These values can be found in Table 3.

Examination of the race of the subjects in this study and total aggression did not reveal any significant findings (r = .14, p<.05). There was, however, a negative correlation between school dropouts and a mother living in the home (r = -.22, p<.05), while there was no significant correlation between school dropouts and a father living in the home (r = -.14, p<.05). Furthermore, there was a significant negative correlation between a father living in the home and a childhood history of trauma (r = -.30, p<.01).

A significant positive correlation was found between total **lifetime history of aggressive behavior** and a **childhood history of neglect** (r = .18 p<.05). A significant negative correlation was found between a mother living in the home and a childhood history of neglect, with a correlation of r = -.19, p<.05. Additionally, a mother living in the home was also significantly negatively correlated with a childhood history of abuse (r = -.36, p<.01).

Direct Exposure to Violence and Aggression

Many subjects reported observing violent acts in their neighborhoods, including witnessing someone being shot who subsequently died, someone being shot who subsequently did not die, someone being stabbed, gang violence, someone getting beat up, and a robbery that involved someone getting beat up. Direct exposure to these violent acts showed a significant positive relationship with total aggression, as measured by the Aggression questionnaire (r = .30), total positive beliefs about aggression, as measured by the LAQ (r = .25), and total history of aggression, as measured by the LHA (r = .40), with all having p<.01. It also showed a significant negative correlation with the LSRP in the psychopathic direction (r = -.19, p<.01). Furthermore, the total number of violent acts witnessed was significantly positively correlated with the Aggression Questionnaire (r = .20, p<.05) and the LAQ (r = .24, p<.01) and the LHA (r = .40, p<.01).

Individuals who reported having had violent acts committed against them, such as being stabbed, a group of children beating them up, someone beating them up, someone stealing something from them and then beating them up, as well as someone raping them, showed a significant positive correlation with total aggression (r =.21, p<.05), and total lifetime history of aggression (r =.36, p<.01). All of these findings can be found in Table 4.

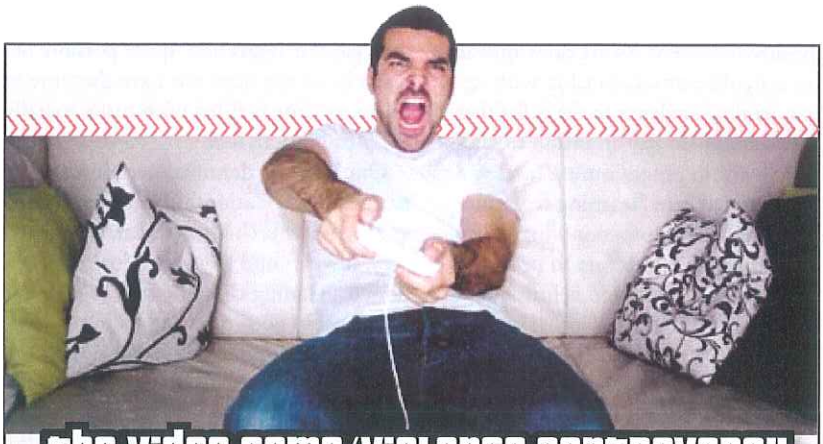
Videogames and Aggression

The specific types of videogames these adolescents reported playing, which included *Mortal Kombat*™, *Resident Evil*™, any number of first-person shooter games, *Grand Theft Auto*™ (including *Grand Theft Auto III*™, *Grand Theft Auto*™: *Vice City*, and *Grand Theft Auto*™: *San Andreas*), as well as any number of sports-related games, were examined for relationships. Correlation analyses were run to determine the nature of the relationship between the different types of games surveyed. It was found that individuals who reported playing *Mortal Kombat* ™showed a significant positive correlation with *Resident Evil*™ (r =.31, p<.01), first-person shooter games (r =.29, p<.01), and *Grand Theft Auto*™ (r =.52, p<.01). They also had a positive correlation with total amount of video game play in hours (r =.19, p<.05).

Those adolescents who endorsed playing *Resident Evil*™ also showed a significant positive relationship with first-person shooter games (r = .52, p<.01) and *Grand Theft Auto*™ (r =.32, p<.01), but not with the amount of video game play (r =.15). Those adolescents who endorsed playing first-person shooter games showed a significant positive correlation with *Grand Theft Auto*™ (r =.25, p<.01) and with the amount of video game play (r =.20, p<.05). Individuals who endorsed playing *Grand Theft Auto*™ also showed a significant positive relationship with amount of video game play (r =.18, p<.05).

Consequently, **correlational analyses** were conducted and detailed in Table 5 to determine the nature of the relationship between the different types of videogames sampled and the other measures of aggression included in this study. *Grand Theft Auto*™ was the sole videogame found to be correlated with positive beliefs about aggression (r = .27, p<.01), lifetime acts of aggression (r =.24, p<.01), and increased psychopathy (r = -.27, p<.01).

Next, correlational analyses were conducted between the different video games



the video game/violence controversy

The relationship between video games and violence is a controversial, highly debated issue. Numerous studies have been conducted on the subject, with varying results. A shocking 90% of U.S. children partake in video game play, spending an average of 13 hours per week on this pastime. A recent Iowa State University study tried to answer the perplexing question: Are more aggressive children attracted to violent games or do the actual games make the children violent? The study focused on the video game habits of children and teens and how these habits related to their behavior 3 to 6 months later.

Researchers studied three groups of adolescents: 181 Japanese students ages 12 to 15; 1,050 Japanese students ages 13 to 18; and 364 U.S. kids ages 9 to 12. Researchers studied the types of games the children played and how often they played them. They asked participants to rate their own behavior in terms of physical aggression and also took into account reports from their peers and teachers.

Because aggressiveness is a strong predictor of future bad behavior, researchers took into consideration how aggressive the children were prior to the start of the survey. The results of the study revealed that children who were exposed to more video game violence became more aggressive over time than their less-exposed counterparts, evidence that video games quite possibly cause aggressive behavior.

Dr. L. Rowell Huesmann, director of the Research Center for Group Dynamics at the University of Michigan's Institute for Social Research in Ann Arbor, explains that there are two ways in which violent media can trigger violent action, the first of which is imitation. Children exposed to violence in the media often absorb the idea that the world is a hostile place and that aggressive behavior is an acceptable method of action for dealing with the hostility. The second trigger for violent action is that of children becoming desensitized to violence. "When you're exposed to violence day in and day out, it loses its emotional impact on you," says Huesmann. "Once you're emotionally numb to violence, it's much easier to engage in violence."

Dr. David Walsh, president of the National Institute on Media and the Family, argues that the incorporation of violence in the media has left us with a "culture of disrespect" in which children are taught that it is acceptable to treat others in an impolite and even combative manner. "It doesn't mean that because a kid plays a video game they're going to immediately go out and beat somebody up," Walsh says. "The real impact is in shaping norms, shaping attitude. As those gradually shift, the differences start to show up in behavior."

Information retrieved from: http://www.cnn.com/2008/HEALTH/family/11/03/healthmag.violent.video.kids/index.html

sampled in this study and the different scales of aggression (physical aggression, verbal aggression, total aggression, anger, and hostility) that are measured in the Aggression Questionnaire. *Grand Theft Auto*™ was the sole videogame to show a significant positive correlation with total aggression (r =.19, p<.05), as well as the only one to show a significant positive correlation with physical aggression (r =.26, p<.01). Furthermore, *Grand Theft Auto*™ also showed a significant positive relationship with verbal aggression (r =.18, p<.01), as did *Mortal Kombat*™ (r=.18, p<.01). First-person shooter games also showed a significant positive correlation with verbal aggression (r =.24, p<.01). None of the video games sampled showed any significant relationship with anger or hostility. **Verbal aggression** was the only one of the aggression subscales to show a significant positive relationship with amount of video game play (r =.21, p<.05). These findings can be seen in Table 6. Moreover, those individuals who endorsed frequent video game play had a negative correlation with endorsement of non-violent movies as their favorite (r = -.26, p<.01).

Extracurricular Activities, Videogames, and Aggression

After-school activities, as well as religious-related activities, were examined in regards to their relationship with violent video game play. These findings can be found in Table 7. Individuals who endorsed participating in after-school activities in their neighborhood showed a significant positive relationship with the playing of first-person shooter games (r =.21, p<.01). Individuals who endorsed attending church showed a significant negative correlation with *Resident Evil*™ (r = -.19, p<.05) and first-person shooter games (r = -.25, p<.01).

These after-school activities and religious-related activities were also examined in regard to the nature of their relationship with total aggression, as well as the various scales of aggression on the Aggression Questionnaire. It was found that individuals who reported participating in any extracurricular activities after school showed a significant negative correlation with verbal aggression (r = -.18, p<.05). Furthermore, those individuals who endorsed participating in any group activities in their neighborhood showed a significant negative relationship with the LHA (r = -.18, p<.05). Those who endorsed attending church showed a significant negative relationship with total aggression (r = -.29, p<.05) and a significant positive relationship with the LRSP (r = .27, p<.01). Finally, those individuals who endorsed participating in any activities at their church showed a significant negative re-

lationship with total aggression (r = -.23, p<.01), the LAQ (r = -.29, p<.01), and the LHA (r = -.19, p<.05), as well as a significant positive relationship with the LSRP (r = .24, p<.01). Also, those individuals who endorsed playing laser tag showed a significant positive correlation with paintball play (r =.43, p<.01). These findings are summarized in Table 8.

Influence of Demographic Variables on Aggression

Finally, several simple multiple regression analyses were performed in order to examine whether the amount of exposure to violent media or certain other demographic variables, such as involvement in extracurricular activities or active involvement in church, would predict aggression. Scores on the Aggression Questionnaire were regressed onto the scores of several variables of the Exposure to Violent Media Questionnaire and the Children's Perception of Exposure questionnaire. These findings are documented in Table 9. Active involvement in church, including any type of involvement beyond simply attending church, accounted for 5% of the variance in AQ scores, while total number of violent acts witnessed in one's neighborhood added another 3%. The total variance on the Aggression Questionnaire that was accounted for by active involvement in church and number of violent acts witnessed was 8%. Importantly, each variable made statistically significant contributions to the prediction, betas = -.21 and .18, ts = -2.46 and 2.09, p<.05, respectively.

Discussion

The present study sought to assess the nature of the relationship between exposure to violent media and aggression by analyzing six self-report questionnaires designed to assess exposure to violent media, aggressive behavior, aggressive beliefs, psychopathy, and direct exposure to violence. These constructs of aggression, lifetime history of aggression, psychopathy, and legitimacy of beliefs about aggression are thought to be interrelated and were hypothesized to show such a relationship. In other words, if a person is aggressive, he or she is also likely to have a history of aggressive behavior, hold positive beliefs about aggression, and have a higher level of pyschopathy than the normal population. Future research must assess the etiology of such likelihoods.

Exposure to violent media does appear to have a significant relationship with aggression, lending credence to the belief that "viewers actually do pay attention to cues embedded within programming" and as a result adolescents are "learning from media programs." Thus, programming policy could be altered in an effort to promote the concept that "television is influential in promoting prosocial behavior" (Hogben, 1998, p. 242). If viewers do learn from what they are exposed to on television or through other forms of media, it would be imperative to create more **positive media for children and adolescents** in order to teach them more constructive behaviors and attitudes. Moreover, both *Mortal Kombat*™ and other first-person shooter games did also show a significant relationship with verbal aggression, with first-person shooter games showing the highest correlation with this form of aggression. Additionally, those individuals who engage in one type of violent extracurricular activity, such as paintball or laser tag, are likely to engage in more than one of these activities.

The findings of this study also showed a significant positive relationship between those individuals who reported being neglected in their childhood and also reported having been traumatized, abused, and bullied. If an adolescent reported being neglected as a child, he or she tended to endorse more aggressive behaviors.Therefore, it seems there is a relationship between neglect and aggression. Again, future research must assess the etiology of the relationship.

Furthermore, there was a relationship between a mother being in the home and a child not dropping out of school, as well as a lower incidence of neglect and abuse. Also, if a father was present in the home, there was a lower reported history of trauma. These findings were interesting and lend credence to the argument of the importance of a two-parent household, and how essential it is to have both a mother and father in a child's life. These findings are also consistent with previous research that suggests that when children are left unsupervised for periods of time, they are at a greater risk of delinquency (Scholte, 1999).

Additionally, adolescents who reported participating in group activities in their neighborhood also showed a significant negative relationship with total aggressive acts in their lifetime. This would lead one to predict that if a child is involved in extracurricular activities, he or she is less likely to engage in aggression, quite possibly because he or she does not have the time to do so, as time is filled with more socially conforming activities.

One finding identified pertained to the nature of the relationship between church attendance, church involvement, and aggression. It was found that individuals who endorsed attending church showed a **negative relationship with total aggression**, including physical aggression, verbal aggression, and anger, as well as reportedly had engaged in less aggressive behaviors throughout their lifetime and were less psychopathic. Also, those whose involvement in the church was very active endorsed participating in other activities beyond worship services. They also showed a negative relationship with total aggression, including physical and verbal aggression. They also held fewer positive beliefs about aggression and had reportedly engaged in fewer aggressive behaviors throughout their lifetime.They were also less psychopathic. This could be due in part to the focus on character-building often taught in religious organizations, who teach children rules for living and devalue violence and aggression as a way to achieve goals. Future research must address the causal nature of this finding. This was a variable assessed by a measure used in this study and was not a specific hypothesis that was developed in the beginning of this study; it was identified after the fact only as a truly interesting effect.

We were able to determine that there were significant relationships between the two constructs of exposure to violent media and aggression, but we could not attribute any causation to either of them due to the correlational nature of the study.

The **significant findings** of this study have major implications for the video game industry and media corporations in general. Rockstar Games' *Grand Theft Auto*™ is a widely popular game, but is also highly correlated with aggression, specifically physical aggression. Individuals who have filed lawsuits against Rockstar Games arguing that the game has trained their children to engage in violent acts may have some basis for their argument. Further, violent children appear to be drawn to violent media as illustrated in the present research investigation. Much care must be taken in order to account for this phenomenon. It is also difficult to tease out the impact of exposure to actual community violence in this sample. Future research may seek to control the variable of community violence in

order to increase the robust nature of the findings. However, until a true experiment is conducted examining this relationship, the causal nature of the argument cannot be confirmed. In addition, this study indicated religious affiliation and involvement is significantly negatively correlated with aggression and, as a result, has implications for religious organizations around the world and for further study.

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CE ARTICLE 2: The Relationship Between Virtual and Actual Aggression: Youth Exposure to Violent Media (Pages 32-42)

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LEARNING OBJECTIVES

After studying this article, participants should be better able to do the following:

1. Identify the extent to which young children and young adults are exposed to violent media.
2. Have a deeper understanding of the adverse nature of violent media in the sample provided.
3. Recognize the psychological theories most relevant to the understanding of attitudes toward aggression.

KEYWORDS: exposure to violence, violent videogames, aggression, adolescents, religion

TARGET AUDIENCE: Psychological professionals

PROGRAM LEVEL: Basic

DISCLOSURE: The author has nothing to disclose.

PREREQUISITES: None

ABSTRACT

Previous research has examined exposure to violent media and the relationship between exposure and various forms of behavior. The predominant theory to explain these relationships is social learning theory made popular by Bandura (1978). The present research investigated the role of social learning theory through exposure to violent media and its' relation to aggression. Demographic variables were researched in order to illustrate their relationship to aggression.

One hundred and twenty-seven high school students from a public high school in Florida, between the ages of 14 and 18 participated in the current investigation. Several questionnaires were administered to determine perception about exposure and actual exposure to violent videogames. Perception about aggression was also assessed. Results revealed the nature of the relationship between exposure to violent media and aggression. One violent videogame was specifically shown to relate to total aggression. Religious affiliation was shown to be negatively correlated with aggression.

POST CE TEST QUESTIONS (Answer the following questions after reading the article)

1 Most psychological research about aggression is focused on
a. treatment.
b. assessment.
c. exposure.
d. cause.

2 Bandura and colleagues (1963) found that
a. behavior could not be successfully modeled by film.
b. children should be mentored by their parents.
c. individuals who witnessed aggressive behavior on film exhibited twice as much aggression as those who were not exposed to violent film content.
d. Bobo was rude to the children.

3 Violent media has been shown to affect an individual's
a. cognition.
b. affect.
c. arousal level.
d. all of the above.

4 Once an individual develops aggressive tendencies,
a. he/she is prone to keep those tendencies for the rest of their life.
b. he/she develops nasty attitudes.
c. he/she is more likely to get arrested.
d. none of the above.

5 According to Browne and Hamilton-Giachritsis (2005), there is consistent evidence that violent media has substantial short-term effects on arousal, thoughts, and emotions, increasing the likelihood of
a. aggressive behavior in younger children.
b. aggressive attitudes.
c. psychopathology.
d. none of the above.

EVALUATION: Circle one (1=Poor 2=Below Average 3=Average 4=Above Average 5=Excellent)

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