

A Study on the Relationship between Types of Electronic Games Played and Aggression

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Abstract

The effect that aggressive electronic games have on aggression was investigated. In this study, using the Myanmar version of the Aggression Questionnaire developed originally by Buss and Perry (1992), a questionnaire survey of high school student in Mandalay, Myanmar was conducted. The sample included 200 high school students at two Basic Education High School in Chanayetharzan Township. The results indicated that the aggressive game group did not score significantly higher on the Buss-Perry aggression scales. The duration and years of game play were not related to aggression, but frequency of game play correlated significantly with aggression.

Key words: Buss-Perry Aggression Scale, Electronic Games, Parental Attitude

Introduction

The video and computer games have become increasingly popular in the past 20 to 25 years, especially among young people. In the beginning they were mainly played by youth and young adults who were enthusiastic about computers. During the early nineties, however, video and computer games became a matter - of - course in the everyday life of young people, including children like other countries, playing computer and video game is very popular among young people in Myanmar. As the largest consumers of these games are young people, some people thought that needs to be given to the effects of games are having on them. Now the term "Electronic Games" is used as a collective concept for computer games, video games, online games, handheld games, etc. The electronic games include a broad range of visually oriented experiences ranging from benign puzzles to intense, violent action games.

These various types of electronic games are action games, adventure games, puzzle games, role-playing games, stimulation games, sport games and strategy games. Some electronic games are extremely violent, bloody and sexually explicit games scenarios. But not all games are violent, games like the Sims, in which players create can fictional families and then watch them live out their mundane lives may actually foster problem - solving and role playing skills.

Cognitive neuroscientist Daphan Bevalier at University of Rochester in New York measures visual perception of avid games and nonavid games. On average, the videogame players scored 30 percent better than nonplayers. To eliminate the possibility of the games might simply have had better inherent visuals skills. Bevalier formed two other groups of nonplayers: one trained for an hour a day shooting enemy soliders in the action game while the other played the puzzle game. After 10 days, action game trainees scored higher than both the nonplayers and puzzle game trainees. So, Bevalier concluded that action - packed video games enhance the capacity of visual attention and its spatial distribution.

According to the study by psychologist Craig Anderson of the University of Missouri - Columbia an overload of emotion - charged imagery can increase antisocial behavior. In the study of college students published in 2000 in the Journal of Personality and Social Psychology, he found that playing violent games correlated strongly to aggressive personalities, poor academic performance and delinquency. Some empirical research showed the effects of video game on young people.

A review of the literature on the effects of electronic game on young people has been based on earlier research of the effects of TV on children. Some studies said that television

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can have a negative influence on children's development by taking them away from homework, making them passive learners, teaching them stereotypes, providing them with violent models of aggression, and presenting them with unrealistic views of the world. In one longitudinal investigation, the amount of violence viewed on television at age was significantly related to the seriousness of criminal acts performed as an adult (Huesmann, 1986). In another investigation long - term exposure to television violence was significantly related to the likelihood of aggression in 1,565 12 - to - 17 years old boys (Belson, 1978). Boys who watched the most aggression on television were the most likely to commit aggression toward another boy, write slogans on walls or break windows. These investigations are correlational in nature, so we cannot conclude from them that television causes children to be more aggressive, only that watching television violence is associated with aggressive behavior.

Although some critics have argued that the effects of television violence do not warrant the conclusion that TV violence causes aggression (Freedman, 1984), many experts argue that TV violence can include aggressive or antisocial behavior in children (Condry, 1989; Huston, Walkins & Kunkel, 1989; Libert & Sprakin, 1988; NAEYC, 1990).

Since the late 1970s when computer game playing joined television as a preferred childhood leisure activity, one of the main concerns that has constantly been raised is that most games feature some kind of aggression. This has led some to believe that children become more aggressive after playing such games. Studies examine in his review (Harris, 2001) often focus on the implication for the player's level of aggression of the emphasis on violence which characterises the most popular games. This either takes the form of human violence (human character must fight or destroy things and avoid being killed) or fantasy violence (as with human violence but with a fantasy or cartoon character). In addition, many games of sport have violent sub-themes (racing, karate, and wrestling). Indeed, these games' popularity tends to be based on their realistic effects, clever marketing strategies which are aimed at children and an ever-increasing emphasis on violence and destruction. These assertions are supported by research carried out by Provenzo (1991), who looked at the content of Nintendo games and revealed that violence was, indeed, a major theme of 40 out of 47 of the most popular games.

Research on TV and aggression lends itself as a paradigm for studying the effects of computer games on young children's behavior. From past television research it may be hypothesized that exposure to violent computer games may increase children's aggressive behavior. Researchers have noted the similarities between television and computer games: both have entertainment value, violent content and some similar physical features (action, pace and visual change). However, there is a very important difference in that children are actively involved in computer game playing and this raises the concern that computer games may in fact have a greater effect on children than television.

Indeed, their effect on aggressive behavior has become the most commonly studied phenomenon surrounding computer games, including some work looking at how self-esteem correlates with these variables. However, the studies do not all point conclusively in the same direction. It is true that findings from the majority of the studies especially on very young children, as opposed to those in their teens upwards-' tend to show that children do become more aggressive after either playing or watching a violent computer game. But, other research uncovers no evidence of computer games having this effect on children's behavior. Indeed, one survey has apparently found that heavy computer game use has a calming effect in providing an outlet for aggression and the open expression of competition.

Methodology

Purpose of the research

The primary purpose of this study was to explore the effect of types of electronic games on young people in Myanmar. This study also explored three relationships: between aggression and year of play; between aggression and frequency of play; and between aggression and duration of play.

Participants

A total of 200 high school students (175 boys and 25 girls) participated in this study. 100 students were from No (2) BEHS and 100 students were from No (12) BEHS in Chanayetharzan Township, Mandalay. Almost all of them were 12 to 16 years of age.

Instruments

Electronic game play items used by Colwell and Kato (2003) were selected and translated into Myanmar by the author and the translation was checked for meaning by the supervisor.

Part 1 was filled in only by electronic game players. The children were asked to tick any systems they possessed, name three favorite electronic games, say who they usually played with (friends, family, alone, other) and say one leisure activity (e.g. Listening to music) if they had some spare time. The following scale was also included.

1. Electronic game plays items:

Years of Plays: How long have you been playing regularly on a system?

(1) less than 1 year; (2) more than 1 year.

Frequency: In an average school week how many times do you play on a game system?

(1) less than five times; (2) more than five time.

Duration: On average, when you play, how long do you play for?

(1) less than 1 hour; (2) more than 1 hour.

2. Parental attitudes items

Three-point scales (code 1 - 3) to measure (a) attempts to control computer game play (never-very); (b) parent's approval of computer game play (strongly disapprove-strongly approve).

Part 2 included Buss and Perry's (1992) 29-item aggression scale, consisting of four subcategories: nine physical aggression items; five items on verbal aggression; seven anger items and eight hostility items. This scale used 5-point Likert-type item ranging from "extremely uncharacteristic of me" (1) to "extremely characteristic of me" (5).

Procedure

Permission to approach participants to voluntarily take part in the study during school times was obtained from Headmasters at No (2) and No (12) Basic Education High School in Chanayetharzan Township, Mandalay. In February 2007, a prospective sample of 200 high school students (from two BEHS), was pooled and survey were administered to all high school student present in the school on the scheduled day. The questionnaires were distributed by two trained researchers. The participants were told that the questionnaire was confidential and encourage to answer as quickly as possible. A total of 200 usable questionnaires were returned with 87 percent of the sample composed of male.

Results

Of computer game players targets studied, approximately 55% (n = 109) of high school students played aggressive electronic games. The most common duration of play was more than 1 h (77.5%), followed by less than 1 h (22.5%). The most common frequency of play was less than five times a week (76%), followed by more than five times a week (24%). The majority of students (69%) had been playing electronic games for more than 1 year. Some

children (14.5%) indicated that their parents disapproved of playing electronic games, but only 10% of parents were said to have attempted to control play. More children said that they usually played electronic games with family or friends (69%>) than played electronic games alone (31%).

Table 1 Principal Components analysis of the aggression scale items

Item	Statement	Factor 1	Factor 2
Factor 1 Overt Hostility ($\alpha = .77$)			
AQ.8	Once in a while, I can't control the urge to strike another person.	.67	
AQ.23	I sometimes feel like a powder keg ready to explode	.55	
AQ.27	My friends say that I'm somewhat argumentative	.50	
AQ.5	I have become so mad that I have broken things.	.48	
AQ.25	There are people who pushed me so far that we came to blows.	.47	
AQ.29	I get into fights a little more than the average person.	.47	
AQ.20	I sometimes feel that people are laughing at me behind my back.	.46	
AQ.13	Given enough provocation, I may hit another person.	.48	
AQ.11	I have threatened people I know.	.44	
AQ.15	I am sometimes eaten up with jealousy.	.43	
AQ.3	When people are especially nice to me, I wonder what they want.	.43	
AQ.28	Sometimes I fly off the handle for no good reason.	.42	
AQ.26	I know that "friends" talk about me behind my back.	.36	
AQ.10	I am suspicious of overly friendly strangers.	.36	
AQ.1	Some of my friends think I am a hothead.	.36	
Factor 2 Convert Hostility ($\alpha = .71$)			
AQ.14	When people annoy me, I may tell them what I think of them.		.64
AQ.22	If somebody hits me, I hit back.		.54
AQ.12	I flare up quickly but get over it quickly.		.53
AQ.4	I tell my friends openly when I disagree with them.		.52
AQ.19	When frustrated, I let my irritation snow.		.51
AQ.6	I can't help getting into arguments when people disagree with me.		.50
AQ.18	I have trouble controlling my temper.		.50
AQ.17	At times I feel I have a gotten a raw deal out of life.		.49
AQ.21	I often find myself disagreeing with people.		.41
AQ.24	Other people always seem to get the breaks.		.37
Residual items			
AQ.7	I wonder why sometimes I feel so bitter about things.	.32	
AQ.9	I am an even-tempered person.	-.27	
AQ.16	I can think of no good reason for ever hitting a person.	.24	.17
AQ.2	If I have to resort to violence to protect my rights, I will.	.17	

A PCA, with varimax rotation was conducted on the aggression scale item and four factors emerged with eigenvalues larger than 1.0, accounting for 35% of the variance. However, a two-factor solution was apparent after inspection of the screen plot (Table 1). The first factor accounted for 13% of the variance and contained mainly of physical and verbal

aggression item. Thus, the first factors are called Overt Hostility. The second factor accounted for 11% of the variance and included mainly of irritability items. Thus, the second factor is called Covert Hostility.

The internal consistency of the two factors and the total score was evaluated by the alpha coefficient. The alpha were as follows, Overt Hostility .77 and Covert Hostility .71 (total score = .82). As a result, four items had to be deleted from the scale, owing to insufficient loading on all two factors, and because they was unable to constitute the three factors adequately. Individual's factors items and loadings are shown in Table (1).

Table 2 A lists of aggressive and non-aggressive games

Aggressive games	Non-aggressive games
um;obd	abmvH
vlyei f*sm	Good hard
Counter strike	Zmwfvrf;oGm;
Smark	ptLufyda&;
a½ppq i fa&;	uf&i f
a&elppq i fa&;	Golf
ajracf;um;armi f	Smark down
Evil	i g;arGjrLa&;
ppwLuf	Tying game
ei f*sm	rmvD H
Vicity	rlyD h
Spider Men	Mappy
UV	Barbie
Yuri	Tank-2
ajracf;vrf;avDnuf	um;lyti tyf
Data	
Kill Swatch	
Warcraft (III)	
vDyk	
Road rush	
Red Alert	
Underground	
Yuri Revenge	
w½kwloD f; *rt;	
Hero ([D½D)	
Sudden Strike	
Warcraft (I, II, III)	
Naruto	
qmr½D f;	
Side pocket	
Rap-lap	
Tarzan	
awmwGif;om;	
yg0g&def;*sm;	
yg0gabmvHk;	

A list of the favourite games named by children, which included aggressive actions, are shown in Table 2. Games were assessed by five judges, with 86% agreement. 45% of children listed non-aggressive game.

Table 3 Means, Standard deviation and "t" value for the two different type of electronic game play group

Scale	1 Non aggressive game (N=91)	2 Aggressive game (N=109)	t - value
Overt Hostility	37.75 (9.47)	39.25(11.08)	-1.01
Covert Hostility	32.86 (6.980)	33.60(8.14)	-0.68

Table 4 Means, Standard deviation and "t" value for the two different year of electronic game play group

Scale	1 Less than 1 year (N= 62)	2 More than 1 year (N=138)	t - value
Overt Hostility	37.45(9.80)	39.07(10.62)	-1.04
Covert Hostility	33.29(7.06)	33.25 (7.89)	0.04

Table 5 Means, Standard deviation and "t" value for the two different duration of electronic game play group

Scale	1 Less than 1 hour (N=47)	2 More than 1 hour (N=153)	t - value
Overt Hostility	37.17(10.23)	38.99(10.42)	-1.06
Covert Hostility	32.26(7.51)	33.57(7.07)	-1.04

Table 6 Means, Standard deviation and "t" value for the two different frequency of electronic game play group

Scale	1 Less than 5 times (N=152)	2 More than 5 times (N=48)	t - value
Overt Hostility	37.60(10.23)	41.63(9.85)	-2.37*
Covert Hostility	32.90(7.38)	34.40(8.32)	-1.11

* p < .05

The first t-test analysis was conducted to see if there was a significant difference between the aggressive and non aggressive games group scores on the subscale of the Buss-Perry Aggression Scale: covert hostility and overt hostility. No significant difference was found between the aggressive and non aggressive group scores for overt and covert hostility, as shown in Table (3). Another t-test was run that analyzed with aggression scores and the following game play measures: frequency, duration and years of play. With regard to overt and covert hostility scale scores, no significant difference was found between children who had been playing electronic games for less than 1 year and children who had been playing electronic games for more than 1 year (Table 4). There was also no significant difference found between children who played for less than 1 h in each play session and children who played for more than 1 h in each play session (Table 5). However, a significant difference was found between the overt hostility score for the children who played more than 5 times a week and the overt hostility score for the children who played less than 5 times a week (Table 6).

This result suggests that more frequently game players were more overtly hostile than less frequently game players.

Discussion

The frequency data in our study suggest that computer game and home video systems have become popular, and more than 40% of children had access to one or more game types. However, arcade game play was relatively high (56%), considering the small number of game centers in Myanmar, but this is to be expected, as regulations do not prevent anyone under the age of 16 entering a game center without their parents. Parents' disapproval of computer game playing appeared to be higher in Myanmar (14.5%) compared to Japan (12.1%), but reported attempts to control were lower (10% vs. 14.6%).

More children preferred aggressive electronic games than in Colwell and Kato's Japanese sample (54.5 % in Myanmar vs. 50.4 % in the Japan). However, it may simply be due to a greater cultural concern over the possible effect of such play. In Myanmar, electronic games with aggressive content are not labeled 'this game involves violence', which may not deter parents from buying them.

The main hypothesis was that the participants who played on aggressive electronic game would score higher on the Buss-Perry Aggression Scale. The result of t-test analysis indicated that the aggressive electronic game group, who did not score significantly higher on aggression scale. This result are similar to those of previous studies showing that playing electronic games, whether aggressive or nonaggressive, may produce the same low level of aggression (Schmidgall, 2006; Colwell & Payne, 2000).

This study also showed that duration of play and years of play were not strongly related to aggression. Those who played longer in each play session and those who had been playing electronic games for more than 1 year were not necessarily increase in aggression. It was found, however, that more frequent played group's overt hostile score was significantly higher than low frequent played group's overt hostile score. This mean that more frequent game players were more overtly hostile than less frequently game players.

To sum up, the result of this study suggests that a preference for aggressive games was not related to aggression, but frequency of play correlated significantly with aggression.

The preliminary nature of these findings needs to be emphasized. The data were collected in only one geographical locale from teenagers in the same general age categories, all measures of aggression were based on self-reports. Additional studies with different young people in different settings with different ways of measuring aggression are needed before these findings can be generalized.

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Many studies find gaming associated with increases in aggression, but others identify no such link. A small but vocal cadre of researchers have argued much of the work implicating video games has serious flaws in that, among other things, it measures the frequency of aggressive thoughts or language rather than physically aggressive behaviors like hitting or pushing, which have more real-world relevance. Even with these constraints, their analysis found kids who played violent video games did become more aggressive over time. But the changes in behavior were not big. It may instead be that the relationship between gaming and aggression is a statistical artifact caused by lingering flaws in study design, Ferguson says. "The research demonstrates a consistent relation between violent video game use and increases in aggressive behaviour, aggressive cognitions and aggressive affect, and decreases in pro-social behaviour, empathy and sensitivity to aggression," said the report. "It is the accumulation of risk factors that tends to lead to aggressive or violent behaviour. The research reviewed here demonstrates that violent video game use is one such risk factor." "We focused on the motives of people who play electronic games and found players have a psychological need to come out on top when playing," said Dr Andrew Przybylski at the time. "If players feel thwarted by the controls or the design of the game, they can wind up feeling aggressive. Currently violent video games are among the most popular video games played by consumers, most specifically First-Person Shooters (FPS). Technological advancements in game play experience including the ability to play online has accounted for this increase in popularity. Previous research, utilising the General Aggression Model (GAM), has identified that violent video games increase levels of aggression. The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Competing interests: The authors have declared that no competing interests exist. Introduction. It was expected that playing a violent video game would increase aggression. Playing violent video games are easily blamed by the media and some experts as the reason why some young people become violent or commit extreme anti-social behavior. But many scientists and psychologists find that video games can actually have many benefits – the main one is making kids smart. Video games may actually teach kids high-level thinking skills that they will need in the future. A study by the Michigan State University's Children and Technology Project found a relation between video game playing and greater creativity, regardless of gender, race or type of video game played. (In contrast, use of cell phones, the Internet and computers other than video games was unrelated to creativity, the study found).