Video Violence

Villain or victim?

A review of the research evidence concerning media violence and its effects in the real world with additional reference to video games

Dr Guy Cumberbatch
The Communications Research Group

A report prepared for
The Video Standards Council

www.videostandards.org.uk

Foreword

There are two basic reasons for this VSC publication.

Ever since the advent of video in the early eighties the video industry has from time to time come under media and political attack. The allegation is frequently made that watching video violence has an adverse effect on the viewer. All too often the allegation is linked to a particular tragedy of the moment. People have been looking for something to blame and video has been a soft target. All too often the allegation is completely without foundation. People have not examined the facts or read the evidence. Since the mid-nineties computer games have come under the same media and political attack.

The VSC receives an ever-increasing number of enquiries from members of the public and more particularly teenage schoolchildren, university students and older academics. The schoolchild may have been given a school project concerning violence on the screen, the university student may be interested in screen violence as part of a media studies degree course and the older career academic may be researching the subject in greater depth.

Against this background the VSC has asked Dr Guy Cumberbatch (a leading expert in the field) to prepare a review of the research evidence relevant to this subject. It should enable those who are seriously interested in the subject to read what the real evidence is and reach an informed opinion.

The VSC does not argue that there is not or cannot be any link between screen violence and actual violence. It does argue that whenever the subject is debated that both sides of the argument should be considered. It does argue that conclusions should be based on real evidence and not on speculation or ill-informed opinion.

Dr Guy Cumberbatch

Guy is a Chartered Psychologist and Director of The Communications Research Group. He graduated from University College Cardiff with a Special Honours degree in Psychology and completed his PhD at Leicester University in Information Processing. Following three years post doctoral work on television violence at Leicester's Centre for Mass Communication Research, he joined Aston University's Applied Psychology Department as a lecturer in Multi-variate Statistics. He left academia after serving terms as Senior Lecturer and Head of Psychology to establish CRG(uk)LTD as an Aston Science Park company.

Guy attaches great importance to objectivity and thus half of all the research done by CRG has been for the regulators and half has been for broadcasters and distributors. He has been expert witness for both defence and prosecution in numerous legal cases involving the media, many of which have been test cases where new principles have been established.

Publications include *Mass Media Violence and Society* (Elek Science, 1975); *A Measure of Uncertainty: The Effects of the Mass Media* (Libbey, 1989); *Pornography: Impacts and Influences* (Home Office, 1989); *Media Violence: Research Evidence and Policy Implications* (Council of Europe, 1995) and *Where Do You Draw the Line?: Attitudes and Reactions of Video Renters to Sexual Violence in Film* (BBFC, 2002).

Guy was a leading expert witness for the Home Affairs Select Committee: *Video Violence and Young Offenders* (HMSO, 1994) and sits on the PEGI (Pan European Games Information) Appeals Committee in Brussels.

QUESTIONS & ANSWERS

Laurie Hall (VSC Secretary-General) talks to Dr Guy Cumberbatch

Laurie: *Violence on television causes violence in society, surely everyone must know this?*

Guy: It is such a common claim that probably most people think it simply must be true. However, the evidence is really quite weak. For example, none of the studies looking at how children are affected by the arrival of television found much change at all. The last case was St. Helena, a British Colony in the South Atlantic Ocean which received television for the first time in 1995. Before and after studies showed no change in children's anti-social or pro-social behaviour. On top of this, the most comprehensive analyses looking at whether violent crime rates changed alongside the growth of television in different countries have concluded there has been no link.

Laurie: *But the crime rate has gone up and up since the 1950s when television was introduced and it's got worse since video came on the scene and now we have computer games which teach our children to become criminals.*

Guy: It's certainly true that crime increased massively after the last world war, but it did so in different countries regardless of the take up of TV. There were an enormous number of changes in British society in this period. Not the least of these was the 'baby boom' which produced a large rise in the number of young people in the population and sadly, much crime is youth related. In fact, as the number of young people has declined, so has the crime rate every year since the mid 1990s. The British Crime Survey findings for 2003 show that victimisation rates have now fallen to those we experienced back in 1981. Violent crime has gone down by 26% since 1997.

Laurie: *That's not what I've read in the papers*.

Guy: There is probably some confusion about crime rates. The most reliable base to use, for most purposes at least, is the annual British Crime Survey. This interviews a nationally representative sample of 37,265 people about whether they have been a victim of crime. However, police recorded crime tends to be the one mentioned most in the newspapers. The problem with police records is that most crimes are not reported to the police for various reasons. Additionally, they can be misleading as a measure of trends over time because the Home Office has regularly made changes in how crimes are logged and these have generally increased police recording rates. For example, two years ago, a new National Crime Recording Standard was introduced and this was expected to increase police figures by up to 20%. Not surprisingly, opposition MPs have seized on the police figures to criticise the government, claiming that crime has gone up, but victimisation rates haven't. One other point to note is that there has been a big rise in people's willingness to report crimes to the police – probably because of greater concern about crime. This is most obvious with violent crime. In the early 1950s, one quarter of all violent crime recorded by the police was classed as 'serious'. Today it is less than 10%. Similar patterns have also been well documented in the United States. Certainly we can conclude, that since videos and video games have become prevalent, crime (especially violent crime), has gone down.

Laurie: *You cannot deny that what appears on the screen has an effect - otherwise why are multi-millions of pounds spent on TV advertising?*

Guy: There are two points here. First of all, most advertising tries to get people to select one brand over another (such as choosing Shell when you fill up rather than BP). It very rarely tries to change behaviour (such as use the bus or train instead of the car). Campaigns that try to change behaviour are usually a flop. Governments often use these but evaluation shows that, on their own, they normally have little or no impact. The very long-running campaigns to persuade people to wear seat belts ('clunk, click, every trip') or not to drink and drive ('you know it makes sense') had virtually no effect until the law was changed and police began to prosecute people systematically. The government faces a similar problem today with young smokers who seem quite resistant to health messages to help them quit.

The second point is that there is no real sense in which television 'sells' violence as a desirable behaviour for the audience other than as entertainment. The messages about television violence are overwhelmingly that baddies who engage in crime and violence get punished and this is particularly true of real world television crime and violence. Thus, in the news, we hear more about serious crime which has a very good clear up rate. With the worst cases, we keep hearing that crime does not pay such as when the villain is arrested, charged, taken to court, sentenced or moves prisons.

Laurie: *Well, all right, I can see that, but you just have to walk past any school playground to see children imitating what they have seen on television or played on their games consoles.*

Guy: Oh yes. The styles of play are clearly linked to the programmes they watch or the video games they enjoy. We've seen fashions come and go like wrestling, *Pokémon*, *Power Rangers*, *Ninja Turtles*, but now *Spiderman* is in. Before TV, children played murderous pirates wielding cutlasses, while a generation earlier boxing heroes inspired many a 'violent' game of fisticuffs. A common feature of children's play - especially boys - is what is called 'rough and tumble' play. You see it in most young animals in Attenborough wildlife programmes. Children occasionally get hurt in this kind of pretend fighting, of course. But if we were to borrow Dr Who's Tardis and whiz back through time, the scenes of children at play would probably be all essentially similar. In earlier times, the savage exploits of dashing highwaymen, brave soldiers, cowboys and Indians and heroic Roman gladiators will have all inspired children's creative play and made anxious adults tut-tut that 'we never played violent games like that when we were young'. We did, but we've forgotten.

Laurie: *But there have been some awful tragedies caused by video and video games - in the eighties, the Hungerford massacre was linked to Rambo, in the nineties the murder of the toddler, James Bulger, was linked to Child's Play 3 and more recently, the video game Manhunt was blamed for the murder in Leicester of the 14 year old lad, Stefan Pakeerah.*

'Massacre' is the right word to describe what happened in Hungerford in 1987. On the 19th August, Michael Ryan shot dead 16 people, including his mother, before killing himself with a pistol in his burning house. Reports that he had carried a Kalashnikov AK 47 assault rifle and wore a headband seem to have been sufficient grounds for a link to be made with the Rambo film, *First Blood*. It was a 'blame game' that most of the media played, including the quality press. For example, *The Daily Telegraph* (21st August) in a full page spread, interleaved the accounts of Hungerford with the plot of *First Blood* so that Rambo became Ryan. Ryan was Rambo. As a later book (*Hungerford: One Man's Massacre*) concluded: 'The truth was a lot less colourful. For it is simply not known whether Ryan ever saw any of the Sylvester Stallone films'. Indeed, a BBC documentary investigation concluded that there was no evidence that he even had a video recorder (Ryan's house was destroyed in the fire) and certainly none that he rented videos.

The case of two year old James Bulger was particularly shocking because his abduction in a shopping centre was captured on CCTV and shown on TV news. So we saw the two ten year old boys who were later charged with his murder. The link with a video was that the father of one of the boys - Neil Venables - had rented *Child's Play 3* some months earlier. However, the police officer who directed the investigation, Albert Kirby, found that the son, Jon, was not living with his father at the time and was unlikely to have seen the film. Moreover, the boy disliked horror films - a point later confirmed by psychiatric reports. Thus the police investigation, which had specifically looked for a video link, concluded there was none. But, of course, this received very little coverage and the lasting impression most people seem to have is of the newspaper campaigns in November 1993 blaming violent videos for the toddler's murder. It's worth adding that most newspapers continually referred to 'little Jamie', when the preferred family name (which his parents asked to be respected) was James. So the press couldn't even get that right.

The *Manhunt* case came up when a 17 year old, Warren LeBlanc, pleaded guilty to murdering his 14 year old friend, Stefan Pakeerah who was stabbed and repeatedly beaten with a claw hammer. It became a major news story. The *Daily Mail* devoted its front page to the case with the headline 'MURDER BY PLAYSTATION' and it received similar treatment elsewhere (e.g. Killing 'incited by video game'. *The Guardian* 29th July). The essence of the story was that (a) the police had seized the video game *Manhunt* as evidence; (b) the murdered boy's father, Patrick, said 'the way Warren committed the murder – this how the game was set out – killing people using weapons like hammers and knives. There is some connection between the game and what he has done'; (c) Stefan's mother, Giselle, said 'I think I heard Warren's friends say that he was obsessed with the game'. Most reports described Giselle as saying 'I heard' rather than 'I think I heard'. Only the local paper *The Leicester Mercury* (29th July) noted that by the time of the trial, the police had decided that the game was not linked.

In the days and weeks following, the case continued to receive considerable media attention when Dixons withdrew the game form all its stores, then Giselle Pakeerah announced that she was going to sue the game's manufacturer. For many newspapers, all this was taken as further proof of the game's guilt. But, from the outset, the story was hardly an open and shut case. The police had seized the game from the murdered boy's house and not the killer's (although Warren had lent the game to his friend). Perhaps the final word on *Manhunt* must be that given in court when Warren was sentenced to life imprisonment: 'The prosecution and defence barristers insisted at Leicester Crown Court that the video game played no part in the killing' (*The Leicester Mercury*, 3rd September, 2004).

In none of the above cases is there much beyond speculation to link video violence with the murders. Indeed, Kate Adie made a BBC Panorama documentary which investigated eight crimes where a 'good link' had been claimed with media violence. None of the cases stood up to scrutiny. James Ferman, Director of the BBFC concluded 25 years of inquiries into copycat violence with the comment: "I do not know of particular cases where somebody has imitated a video and gone out and actually committed a serious crime as a result of what they have seen".

Laurie: *What about America? Those terrible school shootings, like Columbine High School, were linked to violent video games weren't they?*

Guy: That was said. It's a pity we could not get Kate Adie to go over and have a close look at the evidence. There have been half a dozen or more cases where school killers have been described as 'obsessed' with violent video games but the evidence seems as flimsy as in the UK cases above. The fact that with the Columbine shootings the lads played *Doom* is not distinctive or significant when

most of their class mates would also have played it. Interestingly, the FBI has recently produced a threat assessment manual for predicting school shooters. It includes 'fascination with violence-filled entertainment' but note that here, the media violence is used as a *symptom* in risk assessment and in no way suggests a cause. The obvious problem with the school massacres in the USA is the easy access to lethal firearms which these clearly disturbed individuals had. But, perhaps we should restrict our anxieties to this country.

Laurie: *Well maybe, but aren't they now treating screen violence as a health hazard, just like smoking, in America?*

Guy: American politics take some understanding! There were 28 Congressional Hearings about television violence between 1954 and 1996. On one side were those arguing that control was needed because violence was like industrial pollution and a health hazard. On the other, were those who said 'Oh, no it's not' and claimed television violence was protected by the First Amendment of the United States Constitution (which grants freedom of speech). In these hearings, evidence was batted around, new research commissioned and lawyers briefed, creating a mini industry. Then in 1996, the Telecommunications Act was passed, requiring all new television sets (over 13") to be fitted with a 'V' chip by 1st January 2000. This chip reads the information about a programme supplied by the broadcaster - very similar to the information which you, Laurie, introduced much earlier at the Video Standards Council to put on videos. The idea is that parents can then set this chip to block programmes which they don't want their children to watch. It took some time to introduce because broadcasters had to set up a ratings system to apply to all their programmes. Even then the first ratings were just by age group. In America they don't even have a watershed policy like we have here....

(Laurie interrupts: *Do you think this V chip is a good idea?*)

Guy: I'm very much in favour of classification schemes and warnings as an essential part of consumer advice. But a 'V' chip law is daft. More than half of 5-8 year olds have a TV in their bedroom. They wouldn't be bought new ones before analogue transmissions cease and we move to digital multi-channel services. Then for a TV to work at all, it will have to be plugged into a decoder (which will have parental locks). In the USA, three years after the 'V' chip was introduced, less than one in twelve parents with the system actually used it. It's been a flop.

Going back to your question about television as a health hazard, I don't think the United States Congress, in passing the 'V' chip bill, really thought it was reducing a health hazard. President Clinton realised from focus groups that he was beginning to lose the middle class vote. The 'V' chip was a fairly simple way of demonstrating that the government was responding to public concerns about television. Research evidence about the effects of television was essentially irrelevant, though to be sure, a number of these researchers claimed that television was a health hazard.

Laurie: *There is a wealth of research evidence to prove the link between television and violence. You cannot ignore this.*

Guy: There has indeed been an enormous amount of research. Some years ago, one estimate claimed that there were around 3,500 studies on media violence. The American Congress has spent many millions of dollars on the subject. It is also true that most researchers claim that most studies show a link. However, many other serious minded academics disagree. I've read every single study now and spent most of this year re-reading and catching up on the field. I would not call the research

evidence a ‘wealth’ at all. There are very many non-significant findings. Those that are significant seem unreliable, inconsistent and often flatly contradict other studies. Collectively, it is a dreadful ragbag of evidence.

Laurie: *OK. Even if you can’t prove that screen violence causes violence, you must accept that it’s common sense that it does?*

Guy: I have great respect for common sense. Trial by jury - a vital component of our justice system - relies on the commonsense of ordinary people. But so do lynch mobs who convince themselves that what they do is a triumph of common sense. I spend a lot of my time trying to understand public attitudes to identify policy implications. Common sense views are really quite complex. Those who think that television violence affects people always mention other people’s TV programmes, not the ones they like. Most young people of almost any age will say that media violence could be a problem for someone younger than them. Our common sense comes, in part, from gut reaction. Most parents will prefer their children to watch the programmes they enjoyed and not the new ones which their children relate to. *Beavis and Butthead* really alarmed many parents. But probably no more than in the 1950s when there were calls to ban films like *Rebel Without a Cause* (1955) and *Rock Around the Clock* (1956) because of their ‘bad influence’ on young people. In *The Wild One* (1954), when the Marlon Brando character is asked, "What are you rebelling against?" he replies, "What’ve you got?" Subversive stuff!

Common sense doesn’t live in vacuum and our reactions are shaped by media reports telling us that crime has gone up (when it has not) or one more video killer has struck (when a cool look at the evidence would reveal only speculation) or that research now shows proof that there is a link with television or video violence (when the evidence is at best flimsy). It is a pity that bad news is such good news for journalists. The truth is more mundane, rarely reported and certainly would not make the headlines

Laurie: *But surely the continual exposure to violence on the screen must have a long-term effect. It must make people insensitive to real violence in society?*

Guy: Why? You surely won’t feel less upset if you are mugged, or less angry if your neighbour is or less distressed by the next brutal murder of a child today than you did before watching all the video violence that you have to watch in your job. Will you? In any case, as we’ve seen, people are far more likely to report less serious violence these days than they have ever been. The death of the Princess of Wales seems to have generated an all time high in public grief. The murder of James Bulger not only ‘gripped’ this nation with anxiety, shock and horror, but echoed around the televisual world. I’m quite sure that if people watch a lot of horror films, they react less to screen horror. But the worst thing is expecting the worst. Those who don’t like screen violence often look away and hide their eyes when they expect something nasty. If you get them to look, they will usually agree that it wasn’t as bad as they thought it would be. We might get ‘used’ to screen violence but I really don’t think this has anything to do with our sensitivity to the real world.

Laurie: *OK. What are you saying? That anything goes? That there should not be any limits on screen or video violence?*

Guy: Oh, no. Not at all. It seems perfectly reasonable that there should be what the Americans call ‘community standards’. For example, you will probably remember one rumour circulating before videos were regulated was that you could get a copy of the post mortem of Elvis Presley on video. It

wasn't true. But the rumour at least reminded most people that there are clear limits to what we can tolerate as public entertainment. On the other hand, I cannot think of any research evidence which might indicate that watching such a video would 'harm' people who might chose to watch it. I think the obvious problem is in specifying too tightly in advance what can or cannot be shown without examining matters on a case by case basis. Perhaps a good example is two years ago, when Channel 4 transmitted a live autopsy conducted by Professor Von Hagens of *Bodyworlds* fame. A number of newspapers predicted a public outcry but there were only a few complaints from viewers.

Of course, like most people, there are quite a few videos and video games which I wish had never seen the light of day, but we need to have good reason to censor or ban material. We should remember that in the UK, video is far more stringently regulated than anywhere else in Europe. In the UK it is a very serious offence to supply a video or video game classified by the BBFC as '18' to anyone under that age. In the rest of Europe classifications are only advisory and almost anything goes at an age '16' classification.

Laurie: *Anything else you want to add, Guy?*

Guy: Two things really. First of all, while the research evidence on media violence causing harm to viewers is wildly exaggerated and does not stand up to scrutiny, parents should not be complacent. A balanced media diet is obviously to be recommended, so parents should establish ground rules within which they can negotiate with their children to achieve this. And the media diet must form part of the overall balance of leisure activities.

Secondly, I would like to see more pro-social media fare because I do think this might well help make society a better place. Punching someone on the nose is an instinctive reaction which we don't have to watch on the screen to learn. Negotiating conflict situations without violence needs learned skills which perhaps television, video and computer games might help develop. Who knows? Perhaps one day governments might learn to negotiate better and declare war less. Perhaps then they might stop providing the most obvious example of the virtue of violence.

Video Violence: villain or victim?

Introduction

In 2003, some 208 million DVDs and videos were sold in the UK and a further 150 million were rented. Probably at least twice this number of people watched these, quite apart from the pirate market. Over 56 million video games were sold, each played by an unknown number of people. Even today, with television audiences increasingly fragmented across multiple channels, a recent broadcast of the 'violent' movie *Die Hard with a Vengeance* attracted an audience of almost six million people on just one night (Broadcast/BARB, 2003). Only a few years ago, before multi-channel TV (notably satellite and cable) spread rapidly, as many as 18 million people might watch a 'violent' James Bond movie on ITV.

The sheer size of these audiences has long fuelled speculation and belief that the media must have some profound impact on society. Concerns are that there must be a drip-drip effect on everyone. More worryingly, there are probably some - perhaps many - disturbed individuals who will act out the violence they have seen on their screens. Every year some tragic crime seems to make speculation about media effects newsworthy, or some research is produced where scientists are said to have 'proved the link' between video violence and violence in society.

Video danger

There is no doubt that the majority of reviews of the research literature on media effects conclude that exposure to violence in movies, on television and in video games makes people more aggressive. Craig Anderson, Leonard Berkowitz et al (2003) open their review, *The influence of media violence on youth,* with the words:

> *Research on violent television, films, video games, and music reveals unequivocally that media violence increases the likelihood of aggressive and violent behavior in both immediate and long term effects.* (p 81)

Similarly, a recent review volume edited by Douglas Gentile (2003) begins thus:

> *A clear and consistent pattern has emerged from over four decades of research on the effects of media violence. It is therefore surprising that many people still resist the idea that media violence has negative effects.* (p ix)

One other title: *Stop Teaching our Kids to Kill: A Call for Action against TV, Movie and Video Game Violence'* (Grossman and DeGaetano, 1999) illustrates just how passionately some writers believe this. Some have even argued that, over the years, the various research on media violence has grown to perhaps around 3,500 studies (e.g. Wartella, Olivarez and Jennings, 1998). Whatever the number, most research has focused on television where it has been claimed for decades: *'the overwhelming consensus is that such media violence is harmful'* (US Surgeon General Jesse Steinfield, 1972) and:

> *There can no longer be any doubt that heavy exposure to televised violence is one of the causes of aggressive behavior, crime and violence in society.* (Eron, 1993, p14)

Similarly confident conclusions are beginning to emerge about the effects of video games. As Craig Anderson (2003) put it:

> *We now know that playing violent video games increases aggressive behaviour and decreases prosocial behaviour in children and in young adults*. (p 164)

What danger?

Other reviewers find the evidence far from convincing. Jonathan Friedman (2002) in his book, *Media Violence and its Effect on Aggression: Assessing the Scientific Evidence*, claims to have perused all the available evidence and asserts that there are not 'thousands of studies'. Of course, thousands of publications exist, but

> *In fact there are only around 200 separate scientific studies that directly assess the effects of exposure to media violence.* (p 24)

Having reviewed these in detail, Friedman concludes:

> *Let me end by acknowledging again that to many people it seems self-evident that media violence causes aggression. I think I have shown in this comprehensive, detailed review that the scientific evidence does not support this view.* (p 210)

In his book *The Case <u>for</u> Television Violence*, Jib Fowles (1999) argues that media violence has a largely beneficial role for viewers. He finds that exaggerated claims for media harm have been made based on flawed evidence:

> *Opened up for inspection, the sizable violence effects literature turns out to be an uneven discourse - inconsistent, flawed, pocked. The literature proves nothing conclusively, or equivalently, this literature proves everything in that support for any position can be drawn from its corpus.* (p 49)

The position of David Gauntlett (1995) in *Moving Experiences* is more cavalier:

> *The search for direct 'effects' of television on behaviour is over. Every effort has been made, and they simply cannot be found…the effects tradition has reached the end of [a] circuitous and theoretically undernourished line of enquiry.* (P 7)

Annette Hill (1997) recommends in her book *Shocking Entertainment: Viewer Responses to Violent Movies* that such media fare is far from dangerous or unhealthy, but instead provides a safe environment in which to explore issues of violence.

Durkin, (1999), Griffiths (1999), Gunter (1998), Harris (2001) and Heins & Bertin (2002), after examining all the available research into the effects of violent video games, decided that the evidence was too weak and contradictory to allow conclusions. As Unsworth and Ward (2001) conclude:

> *The inconsistencies in the findings of a vast body of research and the rate of advancement in video game technology make it difficult to draw any firm conclusions about the relationship between exposure to video game violence and aggressive behaviour*. (p 189)

Opposing viewpoints

Media violence is a deeply controversial topic. This monograph will deal primarily with the research evidence. It should be noted here that most such investigations have been conducted by psychologists in the USA. Few define what is meant by 'violence' beyond the specific measures taken in any particular study. Many will use terms such as 'media', 'video', 'film' and 'television' almost interchangeably, perhaps partly due to so many laboratory experiments where film or television clips were shown to audiences on either a large screen or a television set. However, quite apart from the adequacy of such research which has been a matter of some debate within social science, other perspectives need to be considered.

A good example is that of Martin Barker and Julian Petley (*Ill Effects: the Media/Violence Debate*, 2001) who adopt a more oppositional stance, essentially rejecting the very notions of 'media violence' and 'harmful effects' as having any real meaning as a research issue:

> *The claims about the possible 'effects of violent media' are not just false, they range from the daft to the mischievous….Of course, different kinds of media use different kinds of 'violence' for different purposes – just as they use music, colour, stock characters, deep-focus photography, rhythmic editing and scenes from the countryside, among many other. But in exactly the same way as it is daft to ask 'what are the effects of rhythmic editing or the use of countryside scenes?' without asking where, when and in what context are they used, so, we insist, it is stupid simply to ask 'what are the effects of violence?* (p 1-2)

While this view is located within media studies, it is not uniquely so. There has been a long tradition of research which argues that what viewers bring to the viewing situation is as important as the content of what they watch. This tradition also challenges the very question 'what does the media do to people?' as too simple and mechanistic, suggesting a better question is 'what do people do with the media?' (e.g. Rubin, 2002). Such issues will be discussed later.

Evidence of harm

At first sight, the vast literature on this topic would seem to defy any attempt to provide a simple review of the evidence. Indeed, most writers rely on a selection of studies to support concerns that video violence is harmful. The tradition has been to accept that the harmful effect of TV violence is already established, so theories of harm used to explain TV effects can be extended to related media such as video games.

For this reason, it is important to include in this review the literature on media violence in general. This research includes a variety of methods such as analyses of crime rates before and after the introduction of television; content analyses of various media; studies of offenders; cross sectional surveys of populations to

examine the association between media exposure and attitudes or behaviour; following up groups of people to track long term impacts of media use; experiments in the laboratory and in natural settings. There are patterns in and contradictions across these studies which are all most conveniently discussed by examining the various research approaches.

Crime Rates

It is often said that crime increased dramatically with the growth of television and this provides obvious evidence of the harm that media violence causes. Surprisingly, few researchers have made much use of the statistics available.

The first study was by Clarke and Blankenberg (1971) who examined the relationship over time between crime statistics and the violent content of television, which was rated using programme guides. They found that violent content fluctuated between 1953 and 1969 with peaks roughly every four years, but there was no similar pattern in the crime statistics.

Hennigan et al (1982) studied the patterns in the types of crime before and after TV was introduced to the United States. Larceny (theft) showed a significant increase and there were minor fluctuations in auto theft. However, there was no significant change in either burglary or crimes involving violence.

Messner (1986) looked at data on geographic variations in the amount of crime and in the amount of television watched across the USA (based on 281 Standard Metropolitan Statistical Areas). Surprisingly, fewer crimes occurred where TV viewing was greater.

The most quoted study in this area is by Brandon Centrewall (1989) who concluded that television 'caused' a growth in homicide rates which began to rise quickly in the United States and Canada during the 1960s and 1970s. Thus the rise was 15 years or so after the introduction of television when the 'time bomb' of children made violent by the new medium exploded. A similar increase did not occur in South Africa where television was not introduced until 1975. Centrewall suggests (1992) that if television had never been developed, there would be 10,000 less homicides and 70,000 fewer rapes *each year* in the United States.

However, Fowles (1999) and Friedman (2002) argue that the comparison with South Africa is misleading and nothing to do with television. Both Canada and the USA enjoyed a 'baby boom' in the post war period while South Africa did not. Thus, the rise in homicide may be due simply to the increase in the number of young males (who are the most likely group to commit such offences).

A similar case might be made for Britain where murder rates dropped from 10 per million of the population at the beginning of the century down to only 7 in the 1960s (when television began to spread rapidly) and then rose quickly to stabilise at 10 to 13 per million. However, these rates are among the lowest in the world and are far too small to identify trends reliably (Hood and Roddam, 2000). Police records of violence against the person show a massive seven fold rise from 1956 (when only 10% of households had television) to 1977 (when almost everyone had TV). But then

the murder rate slowed down, increasing just three-fold over a similar period up to the mid 1990s.

Quite apart from other massive changes taking place in the post war period, these figures seem best explained by the 'baby boom'. Thus the number of young people under 16 in the population increased by 25% from 1951 to peak at 14.3 million in 1971 and then declined to under 12 million in 1992. Almost one half (44%) of offenders in violent incidents are described by their victims as aged around 16 - 24 and so we should not be too surprised that the 'true' figure of violent crime victims - as measured by the British Crime Survey - peaked in 1995 (Kershaw et al 2000; Smith & Allen, 2004).

The most recent analysis of homicide rates and the growth of television ownership is by Zimring and Hawkins (1997). These criminologists examined patterns in France, Germany, Italy and Japan to conclude that:

> *They disconfirm the causal linkage between television set ownership and lethal violence for the period 1945-1975.* (p 245, emphasis as original)

Thus, given the pattern of research evidence, it is disappointing that so many reviews cite only Centrewall (e.g. Villani, 2001), while most (e.g. Potter, 2003) make only partial reference to other studies to support the Centrewall thesis. Indeed, the most recent review published by the American Psychological Society (Anderson, Berkowitz et al, 2003) provides three separate references to Centrewall even though these publications all refer to the same set of data. Moreover, the only other researcher they mention is Hennigan who is quoted as finding increased rates of larceny after television was introduced. No mention is made of the more relevant data on homicide rates which, as noted above, showed no change and thus contradicts Centrewall. The absence of any mention of Zimring and Hawkins' book is astonishing.

Arrival of television

The introduction of television could have allowed some sophisticated before and after studies as natural experiments, but sadly, few exist. However, Hilde Himmelweit in Britain (Himmelweit, Oppenheim and Vince, 1958) and Wilbur Schramm in the United States (Schramm, Lyle and Parker, 1961) conducted large surveys of TV's impact on children.

In Britain, despite the overall sophistication of the study, quite cursory measures were taken of children's aggressiveness, but these showed no change attributable to television. The authors concluded:

> *In our survey we found no more aggressive, maladjusted, or delinquent behaviour among viewers than among controls*. (Himmelweit, Oppenheim and Vince, 1958, p 215)

In America, using somewhat more comprehensive measures, the first study found 11-12 year olds who had television were *less* aggressive than those without. No differences were detected in older children. In a second study, there was a weak trend for heavy viewers of TV to be *more* aggressive than light viewers. Overall, no

real conclusions could be drawn. In fact the authors' summary is a classic in circumspection:

> *For some children under some conditions, some television is harmful. For other children under the same conditions, or for the same children under other conditions, it may be beneficial. For most children under most conditions, television is probably neither harmful nor particularly beneficial.* (Schramm, Lyle & Parker, 1961, p 13).

In Canada, Tannis MacBeth Williams (1986) investigated the introduction of television to a small farming and timber logging community which, hidden in a valley, had been below the range of TV transmitters. This study is often quoted as showing that children's physical and verbal aggression increased with television. However, on closer inspection, the data on this is quite puzzling. Two years after first receiving television the children in this experiment appeared to be almost twice as aggressive as two control groups who were also surveyed. What is curious is that these control groups had been brought up with TV and so should have been even more affected by it. However, the key data on aggression increases comes from just 16 young people and so the importance of the findings must not be exaggerated. In any case, Williams interprets these results as due to an increase in materialistic values in the community following television rather than violence in television programmes.

The most recent study by Tony Charlton (Charlton, Gunter and Hannan, 2000), was a much more detailed evaluation of the introduction of television to the small South Atlantic island of St Helena. Despite expectations that anti-social behaviour would increase with TV, the researchers concluded that very little changed. The vast majority of measures taken (55 pre/post television) showed no differences in either anti-social or pro-social behaviour. The minority of results which were statistically significant were fairly equally split between positive and negative changes: five showed *decreases* in pro-social behaviour in boys and girls, but two showed *increases* (boys only). There were only two significant changes in the anti-social behaviour measures - both of which were *lower* after television.

In the face of such weak evidence to support concerns, a popular argument suggests that only particularly vulnerable viewers are affected (e.g. Charlton and Gunter, 1999). One very obvious group to investigate is those who have committed criminal offences.

Offenders

Despite the strong claims that media violence is somehow a school for crime, this has hardly ever been acknowledged by the mainstream research on the causes of criminal offending. Instead, where criminology texts mention possible effects of media violence, they almost invariably refer to studies such as by Huesmann (e.g. Rutter and Smith, 1995).

Perhaps one of the best studies of delinquents was carried out in the UK by Jim Halloran and his team (Halloran, Brown & Chaney, 1970). This involved 334 known offenders (on probation) and two control groups. The first was of 144 working class youngsters matched in terms of age, sex, socio-economic status, intelligence and

school attainment with the delinquents. The second control group was of 185 youngsters matched by age and sex but somewhat higher in socio-economic background and school attainment.

All the participants were interviewed to discover by direct and indirect methods whether there were any differences in the importance they attached to television or its prominence in their lives. In table after table, the results show significant differences between the two control samples and between the delinquent sample and the middle class controls. For example, middle class controls were much less likely to prefer aggressive programmes than the other two groups. However, in table after table, there are no differences between the delinquent sample and the working class controls. The researchers reject the idea that TV is criminogenic, concluding that social class factors are far more important in explaining the relationships audiences have with television.

There are other approaches possible to tease out those factors which are distinctive of violent offenders rather than of the subcultures in which they grew up. One such method used by Kruttschnitt, Heath and Ward (1986) involved a case control approach which matched 100 prisoners convicted of violent crimes with 65 men who came from the same neighbourhoods and backgrounds but who had not committed violent crimes. In this study, participants were interviewed about their experiences of parental violence, school performance, media violence and other potential influences. Although recollections of experiences might be expected to fade and undermine the validity of such measures, the authors concluded that media violence was not a factor in explaining violent criminal behaviour in this sample.

The only research on video games and young offenders appears to be that of Hind (1995). In this study, 72 incarcerated juvenile offenders were allowed to play either a violent game (*Lazerblazer*) or a non-violent one (*Blastris*). Compared with a small sample of 30 non offenders, they were more likely to prefer the violent game.

The most recent UK research is by Kevin Browne, a forensic psychologist, (Browne & Pennell 1998, 2000) who studied the reactions of convicted offenders and a control group to video violence. All the participants were males aged between 15 and 21. They comprised three groups: 54 violent offenders; 28 non-violent offenders and a control sample of 40 school and college students.

First of all, participants were asked about their viewing habits. Almost two thirds (64%) of the violent offenders preferred violent films compared with only 25% of the non-violent offenders and just 11% of the control group. Moreover, two thirds of offenders watched video films more than twice a week compared with only 20% of the control group. When asked to name their favourite actors, two thirds of offenders mentioned ‘violent’ action movie stars (such as Arnold Schwarzenegger, Jean Claude Van Damme and Sylvester Stallone) compared with only one quarter of the control sample.

Participants were then shown ‘a violent video film’ (no details are given) and asked about their experiences. While only 35% of the non-violent offenders said that the violent parts were the most exciting, such scenes were mentioned by 72% of the

violent offenders and 65% of the control group. The authors attach particular significance to follow-up interviews after 4 months and 10 months.

The groups did not differ at initial interview in terms of which film characters they 'identified with most or remembered best' (no distinction is provided in the results), but after 10 months more offenders (82%) than non offenders (43%) mentioned the violent character. The authors note that some 53% of the violent offenders had suffered violence from parents at home and claim this supports the victim-to-offender idea. Browne and Pennell hypothesise that preferences for violent videos will then serve to reinforce distorted attitudes and values, making further violent offending more likely.

Unfortunately this study does not provide any evidence that violent videos do in fact 'reinforce' such aggressive tendencies in offenders. It remains an untested speculation. Moreover, all the offenders studied were in secure institutions (where the film experience might have been relatively memorable), making comparison with the control group, who were at liberty, somewhat dubious. This is especially so, since many of this control group were 'college students', clearly pursuing their education beyond school leaving age. The difference between the two groups in terms of educational level is likely to have been considerable.

Delinquent way of life

Very different findings were reported by Hagell and Newburn in their 1994 study for The Policy Studies Institute: *Young Offenders and the Media*. From a large sample of delinquents, the researchers selected a group of 200 who had been charged or cautioned by the police at least three times in the previous year. However, they were able to complete interviews with only 78 of these. The authors attribute this low response rate as much to the delinquents' chaotic, itinerant lifestyles as their unco-operative or anti-social attitudes. As a control group, 538 school children of similar age were also interviewed.

For many, the results were surprising. The offenders (including a sub-sample with convictions for violent offences) had *less* access to television, video and other equipment where they were living than the control group. Moreover, the offenders had *more* difficulty in thinking of anyone on television they could identify with and were *less* able to name any favourite television programme. Offenders went to the cinema *less* often (50% said they rarely or never went compared with only a quarter of the control group). Thus, the pattern in this study is for offenders to be far less interested in television, film and video than the control group. The same conclusions were drawn about the more serious offenders who had committed violent crimes.

Perhaps the problem with offenders is not that they watch television and videos (violent or otherwise), but that they do not. Instead of staying at home, they may prefer to find their entertainment on the streets in delinquent pursuits (Flood-Page et al, 2000). However, when deprived of their liberty and excitements (as in Browne and Pennell's study), perhaps they can enjoy vicariously on video what they used to experience more directly.

As a final point, Hagell and Newburn found that 'violent' actors such as Schwarzenegger were equally popular with their offenders as with the control group (*Terminator* was in the top five favourite films in both groups). Thus the comparatively very low interest in such heroes reported by the control group in Browne and Pennell's study suggests that they were untypical of their age group rather than the offenders being unusual.

This last issue of matching control groups to compare like with like has been a persistent problem. This can be seen in the considerable number of correlational studies which have used cross-sectional survey approaches to examine the link between violent viewing and aggressive behaviour.

Cross-sectional surveys

These are often described as 'correlational' studies because they examine the link or correlation between two 'variables' such as a measure of how many hours television people watch and a measure of how often they think of punching someone in the face. The aim of such research would be to examine whether these two measures co-vary in their amounts. If a lot of one is associated with a lot of the other then they are positively correlated and have something in common.

Correlations are measures only of *association* between two things and do not prove that one thing (e.g. watching violent videos) *causes* the other (aggression). In fact, the reverse may be true: that being aggressive may 'cause' people to be attracted to aggressive programming. Thus, such studies have a serious limit to their contribution to knowledge, but it is often argued that if no association exists, then it is unlikely that there will be any causal link.

For many readers, one attraction of such studies is that they usually provide a statistical measure of the strength of any relationship found. This is expressed as a correlation coefficient, often the statistic '***r***'. Correlations can vary between +1 and –1. A correlation of zero would mean that there is no relation at all between the two things measured. A positive correlation such as found between childhood aggression and adult aggression might be as high as ***r*** = +0.8. These correlations can be translated into a percentage figure to indicate how much of the variance is being explained. This is done by simply squaring the ***r*** and multiplying by 100. Thus a correlation of +0.8 between child and adult aggression would mean that 64% of all the variability in adult aggression could be 'explained' (a statistical concept) from knowing the amount of aggression shown in childhood.

A final point is that the size of a correlation has very little to do with *statistical significance*. The latter is really a matter of reliability. When the samples of participants are large, even very small correlations can become statistically significant which is normally vital for getting articles accepted in scientifically orientated journals.

A very large number of cross-sectional surveys exist. The total samples probably run to around 100,000 respondents. Many reviewers claim that a large majority reveal some association between media use and aggression. In a statistical (meta-analysis) summary of these, Comstock and Paik, (1994) concluded that television violence

viewing is positively correlated ***r*** = +0.19 with aggressive behaviours measured. Note that this translates to 3.61% of the variance in aggression being 'explained' by television violence viewing. Overall, while this correlation is small, many of the individual studies are statistically significant because large samples of participants are involved.

There are two points here. First of all, if this figure reflected the true social impact of TV, then, even though small, it could translate into a sizeable number of people engaging in aggression. However, such a small figure must focus attention on the adequacy of the designs, the representativeness of the samples and the reliability and validity of the numerous measures used.

Simple summaries of these studies, which involve so many measures, are almost inevitably misleading. Despite this, Anderson and Berkowitz et al (2003) conclude:

> *These cross-sectional surveys provide convincing evidence that frequent viewing of violence in the media is associated with high levels of aggressive behavior.* (p 87)

It is far from clear why the adjective 'high' is used, unless this refers to a study by Belson which is quite dramatically, although rather misleadingly, quoted as reporting 49% more violent acts committed by heavy TV viewers compared with light viewers. However, Belson's research might be more appropriately categorised as a longitudinal study and is reviewed later in this monograph.

Apart from research by Huesmann (again reviewed later), the only other study cited by Anderson, Berkowitz et al is that by McLeod, Atkin and Chaffee (1972) who surveyed almost 700 young people in Maryland and Wisconsin. This study was among the first to report a positive association between the amount of violent television watched and measures of aggression. The overall correlation was typical of the pattern (+0.19) described above. However, Anderson, Berkowitz et al do not mention that this was +0.38 (14% variance) for girls but only +0.12 (1.4% variance) for boys. These results might be seen to contradict almost all other studies over the next decade or more where significant correlations in girls were not found. In these other studies, the absence of links in girls has usually been explained away by arguing that aggressive role models for girls did not appear on television until much later (e.g. Huesmann and Eron, 1986).

Thus, McLeod, Atkin and Chaffee's findings raise questions about other studies and a particular issue of consistency in data and interpretation offered by summaries and reviews. These values are central if the research evidence is to be considered as a body of science. On a related point, it is worth noting that when their results were broken down into 8 sub groups (based on age and school placement), only one remained significant. Looking at the results another way, of the twenty correlations reported, almost half were statistically significant, but only one of these was significant in both the Maryland and the Wisconsin samples. This might be taken to suggest that these 'significant' results were not particularly reliable ones.

Despite the weaknesses in most research designs, which seem effectively biased in favour of finding significant results, the majority of correlational surveys have found little to support concerns about the harm of violent video games. Among the more recent, most fail to find the expected effects.

Van Schie and Wiegman (1997) reported no significant relationship between video game play and aggression in a sample of 346 children (10-14 year olds). Funk, Elliott et al (1998) noted that preference for violent video games and scores on a measure of empathy 'approached significance' but was not significant. Colwell and Payne (2000) were a little more successful. They surveyed 204 adolescents aged 12-14 and claimed a significant correlation between video game play and aggression. However, this result was statistically significant only on the whole sample, it was not significant for boys separately or girls separately.

More recent studies by Durkin and Barber (2002) failed to find any significant relationship between playing violent video games and aggressive behaviour, while Funk, Hagan, et al (2002) report surprise that preferences for violent video games were not related to 'negative externalising behaviours' including aggression in 11-15 year olds. Colwell and Kato (2003) found that those who preferred aggressive video games had *lower* aggression scores.

Krahé and Möller (2004) surveyed 14 year olds (N = 231) in Germany to investigate 'hostile attributional style' (a tendency to interpret neutral situations as threatening) and 'acceptance of aggressive norms' (how acceptable threats and various kinds of aggression were). Using various measures relating to video games (frequency of playing; frequency of playing violent games; liking of violent games and the violence rating of games they would recommend) there were no significant correlations with hostile attributional style in the final analyses. Furthermore, neither the frequency of game play, nor liking violent games was related to aggressive norms. On the other hand, frequency of playing violent games and recommending violence games were both correlated with aggressive norms (values of +0.15 and +0.27 respectively). The significant results represent a small number of the total: there were four measures of video games and four measures of aggression and of these 16 combinations, just three achieved statistical significance.

A somewhat similar approach was taken by Mierlo and Van den Bulck (2004) who explored the idea that video games would encourage a 'mean world view' leading to, for example, exaggerated estimates of the prevalence of crime. In total 322 Flemish secondary school students aged 15-18 took part. Significant effects were found for television viewing but not video games.

In the above study and elsewhere, little attempt was made to control for demographic factors which might be relevant to the measures. Given the ease with which a casually designed study might be expected to throw up significant relationships, the dearth of these in most of the studies is perhaps remarkable.

Confounding correlations

Among the particular problems in correlation studies are 'confounding' variables, sometimes referred to as 'the third variable effect'. This is because it describes the

problem where some other variable (such as social class) causes an apparent link between the two variables of interest. For example, lower socio-economic group children - grades C2DE- watch almost one third (31%) more television than the higher socio-economic groups - grades ABC1 (ITC/BARB, 2000). They are also more likely to become delinquent (Flood-Page et al, 2000). Thus, social class may explain the link between television and delinquency (as, indeed, Halloran, Brown & Chaney advised in their study of offenders carried out more than three decades ago).

It is therefore difficult to attach much value to studies that have failed to control for demographic differences such as age, social class and ethnicity, which are related to both video habits and to delinquency patterns (Kaiser Family Foundation, 2002). Moreover, the usually reported correlation in cross-sectional surveys is between some measure of violent media *preference* and aggression, which of course, begs the question about cause and effect. Indeed, it would be a puzzle if those with an aggressive orientation did not enjoy media violence. The issue must be whether media violence aggravates their disposition to be aggressive.

Nonetheless, correlational studies continue to 'link' violent media exposure to aggression without attempting to control for confounding variables. One large survey by Singer et al (1999) concluded that the amount of television watched and preferences for shows with lots of fighting both correlated with self-reported aggressive behaviour in a large sample of 2,245 young people in Ohio. However, the results also show that witnessing violence in the real world was *three times* more strongly correlated with aggressive behaviour. It seems very likely that violence experience (half the boys surveyed claimed to have beaten someone up in the last year) and television habits were both linked to social class differences and the environment in which they lived.

The history of similar research on video games is much shorter - studies really only began seriously in the 1980s. All quote research on the effects of television violence as the rationale for hypothesising that violent game play might also be correlated with aggression. However, despite the long history of controversy about causal links, very few studies have been designed to overcome the problems noted in the research above on offenders.

The likelihood of finding spurious results was shown in an early study of 15-16 year olds (Dominick, 1984). This initially found that video game playing correlated with aggressive delinquency but, after controlling for television viewing and school grades, this relationship reduced to become statistically insignificant.

Sometimes the strongest claims are made from the weakest data. Anderson and Dill claimed 'We found that students who reported playing more violent video games in junior and high school engaged in more aggressive behaviour.' (American Psychological Society, 2000). However the study to which they refer – a survey of 227 psychology undergraduates (Anderson and Dill, 2000) - makes it clear that the questions asked about earlier game play in junior and high school covered only *how much* students played and not *what* they played.

They also report a significant relationship between video game play and lower feelings of safety in the world (i.e. believing the world is a hostile place). However the latter became insignificant when gender was controlled for.

Funk, Baldacci et al (2004) hypothesised that media violence (videogames, movies, television and the internet) might have a desensitising effect, producing more positive attitudes to violence and lower empathy in viewers. In a survey of 150 ten year olds, they claimed some support for this. Video games and movie violence exposure were both related to pro-violence attitudes but only video games were associated with lower empathy. As the authors note, this evidence does not show an *effect* of video games, but they do not seem to consider this important: 'Even if children with pre-existing lower empathy and stronger proviolence attitudes are simply drawn to violent video games, this exposure is unlikely to improve empathy or decrease proviolence attitudes'. (p 33) However, while this is debatable, the distinction between symptom and cause would seem crucial and it is to be regretted that no attempt was made to unpick the knotty problem.

Gentile, Lynch et al (2004) carried out a survey in Midwestern schools of 607 students (mean age 14) who were asked to name their three favourite video games. For each game, participants were asked to say how often they played (from '1 = rarely' to '7 = often') and to rate how violent the game was (from '1 = a little' to '7 = extremely violent'). These two measures were multiplied to give a score for violent video game exposure. In addition, participants were asked about the amount of time they spent playing video games, how often their parents limited this, whether they had got into a fight in the last year and how often they got into arguments with their teachers. A key measure was that of 'trait hostility' since they hypothesized that those who were most at risk of aggression would be the most influenced by violent video games.

Although the authors claim support for this hypothesis, their final results (p 17) indicate that the amount of play did not correlate significantly with arguments with teachers or physical fights. Violent video game exposure, while statistically significant, correlated only very weakly (+0.10) with having arguments with teachers and (+0.07) with having physical fights. In other words, only half of one percent of the variability in physical fights could be statistically 'explained' by violent video game exposure. However, even if the results had been more impressive, they may merely illustrate that those who score low on hostility measures rarely get into fights or have much appetite for violent media. It remains a puzzle that the authors did not include social class as a control given so much evidence for its role in such behaviours.

Overall, these correlational studies seem to offer a weak pattern of inconsistent associations, requiring some faith to be considered as evidence in any debate on media effects. Perhaps the continuing problem is the lack of any ability to conclude causal relationships. However this is not a fatal flaw intrinsic to cross-sectional surveys. Including in the measurements more of those variables which are known to be relevant to both media use and to aggressive disposition and behaviour would help identify more precisely where the source of variations might lie. This is illustrated in Belson's work below.

Longitudinal studies

Arguably, the most ambitious study of media violence was carried out in London by Bill Belson (1978) and involved very detailed interviews with 1565 boys aged 13-16. He attempted to measure the boys' exposure to television violence when they were younger and to link this to their current self-reported delinquent and violent behaviour. While he was head of research at the BBC, Belson had developed a sophisticated method of analysis to assess the impact of television programmes. This technique, which he called the 'stable correlate method', attempted to match boys according to as many as 236 different measures (like social class) that might correlate *both* with media habits and with delinquency. When the boys were matched on all these, he could then examine only those differences that were due to media violence exposure.

Belson concluded that boys who had enjoyed high levels of exposure to television violence when they were younger committed 49% more acts of serious violence than those who had enjoyed little television violence. However the graphs for the full sample (pp 380-382) show that the relationship between media violence and aggression is curvilinear and peaks in the moderate group. Thus, very low viewers of TV violence were more aggressive than moderate viewers. Moreover, very high viewers were *less* aggressive than moderate to high viewers (50% lower in fact). Finally, exposure to non-violent television also 'correlated' with measures of aggression and delinquency, as did comics, comic books and even newspapers.

Probably the most quoted research in this field has been a series of studies tracking children over time by Rowell Huesmann and Leonard Eron. The authors claim these provide clear evidence that early television violence viewing causes later aggression. Others have gone further, even suggesting "their analyses indicate that approximately 10% of the variability in later criminal behavior can be attributed to television violence" (Smith and Donnerstein, 1998). However this claim appears to be somewhat exaggerated and based on only three participants who were identified as having committed a crime (Freedman, 2002).

These longitudinal studies built on earlier work by Eron who had measured aggression and television viewing in children aged 8 - 9 and again 10 years later. In the first wave there was a significant negative relation between the amount of television watched and aggression. That is, aggressive children watched less TV. On the other hand, there was a positive correlation between preferences for aggressive programmes and the aggression measures. In the second wave, there was no significant relationship between television and aggression. However, Eron found that those boys whose favourite programmes were aggressive ones in the first wave were rated as more aggressive in the second wave. He suggested that this showed a 'sleeper' effect where early television viewing predicted later aggression. While this is true of one measure of aggression in the sample of boys, two other measures were not significant and none were significant in the sample of girls. Nevertheless, the finding was intriguing and of some importance in debates about media effects.

Huesmann and Eron's 1986 report documented the impressive achievement of gathering together researchers from six different countries to carry out similar longitudinal surveys. The analyses are quite sophisticated and the key findings,

importantly, are those which control for initial aggression. In other words, the idea is to look at how early TV violence viewing might predict any changes in aggression from time one to time two. The results, while generally in support of the 'sleeper' hypothesis, were somewhat mixed in terms of statistical significance:

- In Holland, the researchers concluded that their results did not show any effects of television violence and refused to be included in Huesmann and Eron's book (Wiegman et al, 1992).

- In Australia, there were no significant correlations between early television violence viewing and later aggression.

- In the USA, after controlling for initial aggression, the relationship between early television violence viewing and later aggression was significant only in the sample of girls.

- In Israel, the results were significant in the city sample, but were not in the Kibbutz sample.

- In Poland, while the author notes that there were correlations between preference for violence viewing and later aggression, he adds 'nevertheless the results are not large and must be treated cautiously'.

- In Finland, the authors declare "Our study in Finland can be taken to corroborate the previously obtained results that the amount of aggressive behavior in children is related to their viewing of violence on television." However, it is apparent from the full report (Viemero, 1986, p149) that this relationship is only significant in boys and is actually negative (-0.32): in other words the *more* boys watched violent television the *less* aggressive they were later. Moreover, while identification with aggressive television characters is also claimed to be a good predictor of aggression, in the full report (p 149) results show that for *boys* it was those who identified with *female* characters that produced the significant result. Here the correlation is huge: +0.72.

Thus, despite the claims for this research that it reveals a time bomb ticking away, the statistically significant results are more like a damp squib with twice as many not significant. Freedman (2002) summarises the research more critically, pointing out that of the 15 wave pair comparisons, only three were significant. However, after controlling for TV exposure between time one and time two, only one remained significant.

The most recent evidence from this stable (Huesmann, Moise-Titus et al 2003) reports findings from a follow-up study based on 557 participants who were interviewed first in 1977-78 and again between 1990 and 1995. The young people were either 6–7 or 8–9 years old at the first interview. By the second interview they were between 21 and 23 years old.

Tracking down such a group fifteen years later was a formidable task and the attention to this cannot fail to impress the reader. Eventually 398 participants were

interviewed and, in addition, 356 'other' interviews were achieved (121 who were spouses). More than this, archival data was obtained on 450 of the original participants through criminal justice and public driver's licence records.

Numerous results are presented. There are simple summaries of aggression scores at time two broken down by those who at time one were high TV violence viewers compared with all other viewers. These are not helpful since the established value of longitudinal studies lies in controlling for initial aggression at time one to look at whether any increase in aggression at time two might be correlated with earlier violence viewing. Overall, this study appears to find that such viewing correlated +0.19 for men with later aggression and +0.17 for women, both of which were statistically significant. The authors argue that these results show that TV violence is causally related to later aggression because a reverse test, using early aggression to predict later violence viewing, is less strong. However, while this reverse test at first sight appears neat, it might be expected that aggressive children later in life might watch less TV than their counterparts. The reason for this is that there was no correlation (0.00) between adult aggression and adult TV viewing in males who thus might well be spending less time in the home and more in street culture orientated activities.

Gentile, Walsh et al (2004) presented findings from a study of 430 youngsters (7-11 years old). Measures were taken at two points in time with lags (depending on the school class) of between two and six months between each. Although such time lags are small compared with other longitudinal studies, the authors report substantial and significant increases in various measures of aggression at time two predicted from the participants' media violence scores at time one. These media violence scores were all based on self reports by the youngsters of their three favourite TV shows, their three favourite movies/videos and three favourite video/computer games. Each of these was rated by how often they played and how violent they considered them to be. The media violence score is a composite one: no separate analyses are offered of video games.

Most of the results (six sets) show that youngsters high on media violence exposure at time one were far more likely at time two to self report having been involved in a fight. For example, (figure 2), those high on media violence exposure are shown to be twice as likely to report having been 'involved in a physical fight during the school year' (p 6) than those low on media violence exposure.

This considerable difference between high and low media violence groups is also shown for those who had <u>not</u> been involved in a fight at time one. Only 23% of these youngsters who were low on media violence at time one reported being involved in a fight at time two. In contrast, 61% of those who were high on media violence exposure reported being in a fight at time two. These figures are quite puzzling. Overall, more than half of all the youngsters who had not been involved in a fight during the school year (at time one) suddenly, between two and six months later (at time two), said that they had been.

Gentile and Walsh acknowledge that these results may show only that aggressive children prefer media violence and so cannot tell us whether media violence

exposure makes youngsters more aggressive. To investigate this, they turn to various different measures of aggression (using teacher and peer ratings) and examine changes from time one to time two.

In this analysis, media violence exposure at time one correlated with aggression at time two even when aggression at time one was controlled. For physical aggression, the correlation was +0.18 (3.2% of the variance explained), for verbal aggression, it was +0.11(=1.2%) while for pro-social behaviour, it was negative at -0.13 (=1.7%). While statistically significant, the relationships are quite small but nonetheless remarkable over such a short lag.

However, it should be noted that age and social class were not included in the control variables used to produce these figures. This is unfortunate since they are known to correlate with both media violence and with aggression. Age in particular might be expected to have a major impact, given the range of 7-11 which is quite large. In a press statement, co-author Walsh argued that children 'become desensitized and watch more. Concerns about a growing culture of 'incivility' in society may be starting with our children'. (CBS News, Aug 2, 2002). Perhaps so, but this study does not really investigate such a problem nor find such an effect.
A longitudinal study by Jeffrey Johnson (Johnson, Cohen et al, 2002) tracked 707 families with a child in New York State since 1975. Interviews were first carried out when the children were, on average, 6 years old. Later interviews with the young people (and their mothers) were at 14, 16, 22 and 30 years old. The key results show the amount of television watched at age 14 against aggressive acts reported at age 16 or 22 (the data here is combined). A separate analysis shows amount of television watched at age 22 against aggressive acts at age 30. In both cases, there was a significant relationship between the amount of time spent watching TV and subsequent aggressive acts.

Curiously, the analysis does not correlate amount of viewing against aggression measures. Some sort of graph showing this would have been useful. Nor does it split amount of viewing into equal groups such as high, medium, low. Instead the data is broken down in terms of those who watched less than one hour per day (88 participants in the 14 year olds), those who watched 1-3 hours (386 participants) and those who watched more than 3 hours per day (233 participants). The only significant results are between those who watched *less* than one hour per day and all the others who watched *more* than this. The differences between the 1-3 hours and 3+ hours per day groups were not significant, although they were in the expected direction.

The first question must be: how reliable are these findings based on such a small group of unusually low television watchers? The only statistically significant results are based on 45 males so we can guess that had half a dozen young lads in this less than one hour per day group been categorised differently, the results almost certainly would not have been statistically significant. The overall size of the sample appears to have provided the study with a statistical significance which is dubious and a social significance which is quite inappropriate.

It is regrettable that such interesting, important and, indeed, expensive research has been so tendentiously treated by both the authors and reviewers. More worrying is the alacrity with which this study was embraced in the 'definitive review' published by *Psychological Science in the Public Interest* (Anderson, Berkowitz et al 2003). This review comments on Johnson et al's study thus:

> *Total amount of television watching (rather than amount of violent TV viewing more specifically) was assessed….Although this is not the ideal measure of violent TV exposure, the high proportion of television programs that contain violence… suggest that, on average, those people who watch a lot of television are also getting the most exposure to violent TV. (p 88)*

This is probably true, overall. However, almost all similar studies have failed to find a significant correlation between *total TV viewing* and aggression measures. The significant correlational results reviewed in the rest of the article are only of violent media *preferences.* This, of course, raises the thorny question of causal relationships: 'root or fruit'? Thus, the above quotation seems to reveal an unfortunate bias in favour of findings supporting the media harm thesis and a cavalier blind eye to the contradictions.

A final study by Slater, Henry et al (2004) suggests that a sensation seeking disposition leads to people being attracted to violent media. The hypothesis was that personality traits, such as sensation seeking and aggressivity, lead to selective exposure to media violence, but then this exposure reinforces aggressivity. Slater describes this as a 'downward spiral model'. The sample was of 2550 school students in the US who were surveyed at the age of twelve and again over a period of two years. The measures of violent media were fairly cursory, being based on three items: watching action movies, playing video games that involve firing a weapon and visiting Internet sites that describe or recommend violence. Frequency of use for each item was measured on a five point scale from 1 = not at all, to 5 = often. The measure of sensation seeking correlated with both aggression and media violence exposure. In an analysis reminiscent of Huesmann's, Slater and his team produce sets of results showing that early violent media exposure predicted later aggression better than aggression could predict later media violence exposure.

Although the downward spiral idea is an attractive one, the evidence that violent media *reinforce* aggressive thoughts, values and behaviours is not clearly demonstrated. Nevertheless Slater et al's observations should be salutary:

> *If the same predispositions that lead to aggressive behaviour also lead to using violent media content, many of the relationships found in cross-sectional and even longitudinal studies might be called into question.* (p 715)

For many the question marks have remained in place for decades.

Laboratory experiments on children

Among the first experiments to investigate the effects of media violence on children were those dating back to the early 1960s by a psychologist, Albert Bandura, at Stanford University. He used the university nursery to show young children specially prepared films projected through a television set to give the impression of a television programme. These films showed a model (in some experiments this was

an adult, in others it was a child) behaving 'aggressively' towards a large knock down plastic clown called a Bobo or Bozo doll. When the doll was struck it would bounce back up again due to its weighted base. As Bandura describes it, 'The model pummels it on the head with a mallet, hurls it down, sits on it and punches it on the nose repeatedly, kicks it across the room, flings it in the air and bombards it with balls'.

After being exposed to the model's curious antics, the children were led from the viewing room to the laboratory where the film had been made. On the way, they were 'frustrated' by being shown some attractive toys which they were invited to admire. The researcher asked if they would like to play with them, only to be told 'well, you can't'. The children, described by Bandura as 'frustrated', then entered the laboratory which contained the Bobo doll and various other toys. They were ostensibly left alone to play with the toys, but hidden observers watched the children and monitored their 'aggressive' behaviour in free play.

Bandura found, as many other researchers have since, that most children (up to 88%) readily imitate the 'aggression' they have seen on the video film (e.g. Bandura, 1994). He soon became convinced that television could encourage children to imitate the violence on the screen and became involved in campaigns against film and television violence. There is little doubt of the influence which Bandura has had on studies of media violence. Most reviews place his ideas of 'social learning' as central concepts in the development of media harm theories (e.g. Huesmann, Moise and Podolski, 1997).

While Bandura argues that this measure of aggression is a valid one, there is little else one can do with a Bobo doll except hit it. Such behaviour might be better classified as rough and tumble play, rather than aggression (e.g. Smith, Smees & Pellegrini, 2004). In any case, such imitation seems surprisingly rare except in a modelling experiment using specially prepared videos. Noble (1975) maintained that he rarely observed more than 5% imitation in experiments with young children when using TV programmes and commercially available films.

Irwin and Gross (1995) suggest that few 'violent' video game experiments allow children the opportunity to imitate what they have seen and so research may have failed to confirm Bandura's thesis. Although they designed an experiment using video games to 'maximise modelling cues', the children did not oblige by playing with aggressive toys to any greater extent after the 'violent' video game (Nintendo's *Double Dragon*). Nevertheless, the authors comment 'anecdotally it appears that many of the subjects adopted non aggressive toys to imitate aggressive behavior seen in the video game'. Unfortunately they provide no figures on this. A pity and a puzzle given the aims of the experiment.

The general impression from the results is that aggression after 'violent' game play is surprisingly rare. For example, in the research by Irwin and Gross (1995), seven year olds had their heart rate measured while playing a video game (potentially a threatening experience) and were then asked to play a pencil and paper game where they could win one dollar if they beat an opponent. This game was rigged: the opponent was a stooge who snatched the only pencil available and began the

exercise bragging he was going to win the dollar. After 90 seconds the experimenter returned with the extra pencil and the children were observed for five minutes to note any aggression. None of the 30 children who had played the control game of *Excitebike* showed any physical aggression (pushing/snatching and so forth) and in 600 observation records of the children, only two noted any verbal aggression. A parent's dream! The violent video game group was clearly more 'aggressive', providing 12 verbal aggression utterances in total and a similar number of physical aggressive acts out of the 600 observations recorded. It is also possible that the control game may have reduced aggression below that normally expected.

Fleming and Rickwood (2001) measured arousal and aggressive mood in 8-12 year old boys and girls who had played either a violent or a non violent video game. Not only did the results fail to support the hypothesis that the children would be more aggressive after playing the violent game, the authors note that mood was significantly more *positive* than after playing a pencil and paper game.

Funk (2003) reports an experiment with 8-12 year olds who played either a violent or a non violent video game. It had been expected that the violent game group would give fewer empathic and more pro-violence responses in later tests, but no significant differences were found. The author adds 'when pre-existing characteristics were examined, some interesting relationships were found. Children who reported that their favourite game was a violent one, gave more aggressive responses'. Unfortunately this adds nothing to understanding.

While there are numerous difficulties with laboratory experiments of this kind, perhaps the greatest worry is that children do not behave naturally in such strange environments and take their cues from both the experimenter and the experiment itself about how they should behave. Noble (1975) quotes one shrewd four year old who, on arriving at the laboratory for a modelling experiment, was heard to whisper to her mother "Look mummy! There's the doll we have to hit!"

Field experiments with young children

While far more difficult to set up, experiments in more naturalistic settings have the attraction of being less likely to suffer from shrewd participants knowing that they are part of an experiment. Results from such endeavours have been far from clear cut. Gadow and Sprafkin (1989) reviewed in detail the various findings from 20 such studies where television programme clips had been shown to pre-school or elementary school children. They observe:

> *The available literature provides little support for an effect which is peculiar to aggressive content. In fact although almost all studies showed elevated levels of anti-social behavior following the viewing of similar material, they also revealed similar, and sometimes greater, effects in response to low or non aggressive fare*. (p 404)

Among such studies was one by Coates, Pusser and Goodman, (1976) who found that viewing the pro-social children's TV programmes *Sesame Street* or *Mister Roger's Neighborhood* resulted in an almost threefold increase in aggression in pre-

school children. Singer and Singer (1986) also reported elevated levels of aggression in free play following fast-paced pro-social children's television.

Similar research and analysis has yet to be done on video games. The clear assumption in most video game research is that the violent content is the problem. Yet here we see that effects seem less obviously attributable to violence as such and are probably due to arousal effects of stimulating media. None of the research to date indicates how video game play or watching films might be any worse or better than allowing children to play together or perhaps even read a comic (educational or otherwise).

All in all, the research literature exposes an unhelpfully narrow and one-sided approach to understanding video violence or why children can be so nice or so nasty to one another.

Laboratory experiments on adolescents and adults

Perhaps the best known of researchers on aggression to have studied the effects of film violence is Leonard Berkowitz whose publications span four decades. Almost from the outset, his experiments were quite complex designs since he hypothesised that film violence would increase or 'prime' aggressive drives but only when the violence viewed was justified and the people watching it already aggressive.

This is not easy to research simply. Typically, there would be six groups of participants (undergraduate students in the Psychology Department at the University of Wisconsin). Half would be anger aroused (by an experimenter insulting them) while half would be treated neutrally. Then half would see a control film about canal boats and the other half a fight scene from *Champion* starring Kirk Douglas. Half would be told that the aggression against Kirk was justified and the other half told it was not. At the end of the experiment, the participants completed a questionnaire about what they thought of the experimenter. Since this would be sent to his head of department, it allowed the students to 'get the knife in' and was thus the measure of aggression.

Later experiments became even more contrived. Berkowitz hypothesised that participants would behave more aggressively only if their victim (the experimenter) were linked to the film in some way. The experiment then involved introducing the experimenter as 'Kirk who is a boxer' or 'Bob' who was not. Participants who were told that the experimenter was called 'Kirk' punished him more than when he was called 'Bob'.

This style of research has progressed to explore systematically what factors might produce more aggressive responses such as realism of the portrayal, whether the victim shows pain cues, whether the aggressor is punished and so on. A number of researchers now feel that the evidence is sufficient to list the features of film and video violence which should be curtailed for reasons of public health (e.g. Comstock and Paik, 1991; Potter, 1999). However such advice must assume that the research is unproblematic. There are a number of reasons why others are less confident that policy recommendations can legitimately be made.

First of all, if four year olds can guess what an experimenter wants them to do (Noble, 1975), then psychology undergraduates at Wisconsin may well have had some idea what their professor was hoping to find. The worry is simply that they may behave as 'good' participants, providing the experimenter only with the results they think s/he wants.

Evidence that this can happen dates back to the earliest experiments by Berkowitz (e.g. Orne, 1962) and has been well documented over the years (e.g. Rosnow and Rosenthal, 1997). The distorting effect caused by 'good' participants is not inevitable, but arguably more likely with controversial and well publicised issues such as video violence. After all, it requires an innocent faith in (or contempt for) students to believe that those signing up for an experiment to gain course credits for their psychology degree do not learn from their fellow students what the experiments are all about, especially as they are likely to run over several weeks. There has been something of a conspiracy of silence about this problem among experimental researchers.

A second concern is that these experiments usually compare just two different film clips (rarely showing the whole film) and so leave some doubt over whether the control film depresses aggression or the experimental film increases it. Zillman and Johnson (1973) suggested that because control films may be less exciting than aggressive films, they might depress arousal and so inhibit aggressive responding. This seemed to be the case when physiological arousal was measured to a non-violent *film (Marco Polo's Travels*) compared with a violent film (*The Wild Bunch*) and a no film condition.

Similarly, Tannenbaum and Zillman (e.g. 1975) found that arousing but humorous films could produce a similar effect to violent films in increasing aggressive responses. These points echo those made above by Gadow and Sprafkin (1989) that there is considerable uncertainty over what elements of such experiments are the real source of the significant results reported. In any case, it would be a mistake to assume that effects are reliably elicited. The field is well seeded with failures to replicate (Kiewitz and Weaver, 2001).

Laboratory games

The theories of Berkowitz have continued to receive attention. The idea that media violence encourages aggressive thinking has become popular. For psychologists, the attractions of measuring hostile thoughts and moods rather than behaviour are perhaps obvious.

Among the early studies on video games to use such an approach is one by Anderson and Ford (1987). Undergraduates in the Psychology Department earned course credits to take part in an experiment where they were allocated to one of three conditions: playing a 'highly aggressive game' (*Zaxxon*), or a 'mildly aggressive game' (*Centipede*) or a no game condition. The main measure of hostility used was an adjective check list where participants could tick words like 'peaceful' or 'angry' to record how they felt 'right now'.

The main conclusion was that both games increased 'hostility' compared with the no game condition, but that there was no significant difference between the two games

(which were matched on difficulty, enjoyment etc.). The authors discuss whether these negative effects will accumulate over the long term and clearly indicate that a public heath hazard had been identified.

However, they remain silent on the results of one other measure of aggression used. This was a questionnaire about the experiment and the experimenter where the participants could vent their aggression (a measure similar to that used by Berkowitz of hostility and aggression). Clearly, the results were not significant or perhaps they even contradicted the hostility adjective results? In any case, it would seem at least economical with the truth not to reveal the figures. However, since the two games did not differ on the adjective measure, the simplest interpretation is that arousal and not aggression was being measured.

This interpretation seems to be supported by Ballard and Weist (1996) who reported significant correlations between arousal (systolic blood pressure and heart rate) measured while playing video games and hostility (as measured by an adjective checklist). This study also speculates on whether a public health warning should be issued about video game violence. However, students were allowed only 10 minutes of play and the authors admit that the violent game (*Mortal Kombat*) involved more action than the non-violent game (*Billiards*). Curiously, frustration at having to stop play is not mentioned as one other possible explanation of the results.

A later study by Ballard and Linebeger (1999) also used college students to play different versions of *Mortal Kombat* (set at three levels of violence) for 15 minutes to examine possible effects on students' willingness to reward or punish a confederate. Rewards were in the shape of jellybeans while punishment took the form of holding the confederate's hand in icy water. There were no significant differences between the different versions.

The evident weakness in the individual studies and the general pattern of inconsistent findings would not normally lead us to expect researchers to make any strong claims about video games. However, this is far from the case. As with other research on media violence, some of the strongest claims are made on the most flimsy of evidence. A recent example is a study by Anderson and Dill (2000) which attracted considerable media attention in its claim that violent video games are 'potentially more harmful than exposure to violent television and movies which are known to have substantial effects on aggression and violence'.

From this review it is evident that 'substantial' is one adjective which does not seem very appropriate for the rag bag of findings on media violence. So what evidence did Anderson and Dill offer? That after playing a 'violent video game' the student volunteers gave 'significantly longer noise blasts' to an 'opponent in another room. These 'significantly longer blasts' turn out to be just 2% longer than those given by the control group, lasted one half of one second and weren't even loud! (Cumberbatch, 2000).

In the above study, students were not allowed to deliver actual shocks to a real person: their responses were delivered to a computer. It seems inconceivable that even first year psychology students would think a person would receive a noxious

stimulus in an experiment. This deception is so well documented in classic studies by Stanley Milgram and others, that it is usually the subject of introductory classes in both social psychology and professional ethics.

It seems likely that the easy availability of student participants (who earn course credits for participating) and the career imperative for academic staff to publish will continue to drive such experimentation. More recent contributions along the same lines are offered by Bushman and Anderson (2002); Barthlow and Anderson (2002) and Anderson and Murphy (2003). Additionally, Anderson, Carnagey and Eubanks (2003) report similar effects of songs with violent lyrics on aggressive thoughts, feelings and behaviours.

Measures of Uncertainty

Gauntlett (1995) was quoted earlier criticising effects research as 'theoretically undernourished'. However, perhaps the main problem is that there are far too many psychological theories in this field, all of which predict harm from media violence. These include imitation, identification, role play, priming of aggressive drives, desensitisation, arousal, cultivation, plus sundry cognitive associationist theories and derivatives of these. Perhaps the research cup has been too full of pessimism to allow room for alternatives. Or perhaps researchers have been so busy with essentially replicating and extending the approaches of their forebears three or four decades ago that they have not had the time to notice that elsewhere thinking has moved on.

Among the more interesting developments in communications research have been concepts to try to explain why, ordinarily, audiences seem to be quite resistant to media influences. For example, one popular notion to explain why so few studies had found any effects of advertising or political campaigning was that of 'two step flow', whereby opinion leaders consume media and then disseminate the contents (modified by their experiences and expertise) to others. By the 1960's the question 'what does the media do to people?' had got turned round to ask 'what do the people do with the media?' Behind this simple transformation lay profound ideas that what audiences bring to the media are as important, if not more so, than media content.

Despite the tradition of such research which is reasonably well documented in media psychology, it has only recently been represented in effects research. Potter and Tomasello (2003), for example, noted that individual differences produced far bigger differences than their media treatments. Of course, there is no reason why effects theories cannot embrace a person-orientated style of research, but it does require treating audiences as sentient beings who might be asked an intelligent question. The studies reviewed here seem to follow their theoretical hunches unrelentingly, never appearing to ask 'How was it for you, dear participant? What did you think?' Indeed many experimenters persist in describing the participants as 'subjects', presumably to signify their role as data fodder in the researcher's enterprise.

This raises a further issue. Any cursory look at the research field will note that the same problems and the same reservations apply to research today as thirty years ago. For example, laboratory experiments on university students who play a video game for ten minutes so seriously lack ecological validity, that it is a puzzle anyone

can take them seriously. Cross-sectional studies continue to ignore variables which we knew in the 1970s to contaminate findings: showing that more aggressive people consume more violent media cannot contribute anything further to knowledge. Although most studies would seem a quite pointless exercise, an additional complaint must be that research is very expensive and wastes thousands of hours of participants' time. The opportunity cost alone for more interesting studies is considerable.

It is far from easy to detect any obvious improvement in research designs. Measures have changed but perhaps less often to achieve validity and more to help ensure significant results. Over the years, statistical analyses have certainly become more sophisticated but to such an extent that they increasingly obfuscate the process.

Anderson's most recent meta-analysis suggests that:

> *The best estimate of the effect size of exposure to violent video games is about 0.26*. (Anderson, 2004, p 120)

This figure translates to 6.8% of the variance in aggression being explained by video games and is three times higher than reported in a similar analysis by Sperry (2001) who calculated r = 0,15 = 2.3%. However, some 20% of Anderson's results are drawn from unpublished dissertations and there is no available list of the individual results which would have been used to compute the figure. Thus readers are in the unsatisfactory position of being required to accept in good faith that the figure is a reasonable synthesis – it is not possible to independently verify how the figure is achieved.

Returning to the research evidence reviewed here, perhaps the most obvious deficiency lies in the grossly oversimplified approach taken to both media content and media experiences. For example Viemero (1986), presumably following the guidelines given by Huesmann, categorises the following programmes as equally violent: *The Benny Hill Show, Bergerac, Dallas, Magnum* and *Woody Woodpecker*!

Of course, researchers may insist that the violence ratings are statistically reliable (meaning that raters can agree) but the validity of such categorisations compared with audience perceptions is another matter. There is a considerable research literature showing that factors such as the realism, absence of humour and appropriateness of violence are quite central to viewers' judgments about whether scenes are considered violent or not (Howitt & Cumberbatch, 1974; Gunter, 1985; Morrison et al, 1999).

Indeed, quite apart from these dimensions, the narrative and the characters involved are vital to any understanding of what violence means on the screen. In the effects research, no distinction is made between those representations of violence that are part of an anti-violence narrative and those which are not. Not surprisingly, in most early studies of television, the original *Batman* shows are considered violent despite the Dynamic Duo being portrayed as excessively moral beings. Whether children perceive the moral messages in such productions is, of course, another matter

(Buckingham, 1996). But it is as much a disservice to children as it is to the media not to ask.

While it is difficult to disagree with calls for parents to restrict media violence exposure in their children, the lack of any understanding of how this might be achieved and at what cost, is worrying. Despite a few studies (e.g. Kaye and Johnson, 2003) examining media substitutions in a changing world, we know little about how these operate. We do not know whether children who play violent video games watch more or less violent television or watch more or less news. For that matter, we do not know whether exposure to the images of US soldiers humiliating prisoners could desensitise audiences or provide them with aggressive scripts or produce sundry other harmful effects which researchers seem concerned about. The recent identification of MTV (Gentile, Walsh et al, 2004) and rap music (Anderson, Carnagey et al, 2003) as new prime suspects in youth violence, perhaps suggests that there is no hiding place.

However, what we do know from quite extensive research on the origins of delinquency, is that young people who do not stay in the home but prefer to hang around on the streets with their friends are far more likely to become delinquent. If further theoretical nourishment is needed for effects research, it is to be hoped this will be found in criminological studies as well as communication research.

Conclusions

The real puzzle is that anyone looking at the research evidence in this field could draw any conclusions about the pattern, let alone argue with such confidence and even passion that it demonstrates the harm of violence on television, in film and in video games. While tests of statistical significance are a vital tool of the social sciences, they seem to have been used more often in this field as instruments of torture on the data until it confesses something to justify a publication in a scientific journal. If one conclusion is possible, it is that *the jury is not still out. It's never been in*. Media violence has been subjected to lynch mob mentality with almost any evidence used to prove guilt.

This is perhaps most clearly shown in claims that some of the most distressing crimes of late have a media link. For example, Anderson and Dill (2000) suggest that violent video games were probably a factor in the massacre at Columbine High School. Four years later, Anderson (2004) introduces his update review of the research evidence on video games by listing a dozen cases from 1997 to 2003 where violent crime has been 'linked' to violent video games. However, as social scientists, they should be ashamed of themselves in offering only second hand undocumented hearsay support for a link. The uncritical use of media stories speculating that there might be a link sits uneasily with the values of empirical psychology.

Of course such claims are very common, perhaps often made in good faith and sound very plausible, but they have never stood up to scrutiny. In Britain, the House of Commons Home Affairs Select Committee (1994) asked James Ferman (Director of The British Board of Film Classification) what the evidence was in this area. He had advised the committee that, for more than twenty years, whenever some claim

was made that a serious crime was linked to a video or a film, he had always investigated the case. He observed:

> *I do not know of particular cases where somebody has imitated a video and gone out and actually committed a serious crime as a result of what they have seen.* (Home Affairs Select Committee, Fourth Report, 1994, p 5)

Similar conclusions were reached by the BBC's Chief Reporter, Kate Adie, and her team in 1988. They researched eight of the best evidenced cases where a crime had been clearly 'linked' to the mass media for the flagship current affairs programme *Panorama*. To their surprise, none of these cases was supported by any evidence that would be acceptable to a serious investigative journalist. Every single one turned out to have been based on mere speculation – sometimes by proselytising judges but often by fanciful journalists.

Concerns about media violence are quite persistent ones. New media inevitably inherent the legacy of anxieties about rising crime and wayward youth that have fuelled moral debates for centuries (Cumberbatch, 1994). In 1776, Joseph Hanway blamed debasing amusements and newspapers for the 'host of thieves which has of late years invaded us'. In 1869, Greenwood complained that 'penny dreadful' comics 'may sow the seeds of immorality among as many boys as a town may produce'. By 1905 Charles Russell did not need to ask whether theatres caused crime in Manchester's youth: 'horrible murders and terrible tragedies were enacted before the footlights' [which lead to] 'so many instances of violence on the part of young men in the back streets of the city'. Similar worries have been raised about radio, the cinema, the internet and popular music.

The apparent timelessness of such concerns does not invalidate them but should alert us to the existence of well rehearsed frameworks to explain social ills. These seem readily evoked about violence in popular culture but not when it comes to more established forms of artistic expression (such as theatre, opera, painting or literature). Moreover, it seems clear that some graphic images such as in news coverage from Iraq are perceived as an acceptable face of violence to have on our screens. While some - perhaps violent video gamers - may consider this to expose an hypocrisy, the point must be that violent representations are not to be condemned per se. As Marvin (2000) observes:

> *Understanding how cultures circulate meanings about the exercise of physical force requires a richer background language and thicker description and appraisals than can be found in the simplifying assumption that such representations are inevitably coarsening, frequently dangerous and always to be avoided*. (p 148)

Goldstein (1998) shows that the relationship audiences enjoy with violence in entertainment is a rich and multi-layered one which studies of video violence effects completely ignore. To suggest that these studies are misleading would be too kind. Many appear simply deceitful. However, the absence of convincing research evidence that media violence causes harm does not mean that we should necessarily then celebrate it and encourage more. There may be moral, aesthetic, philosophical, religious or humanistic grounds on which we might consider that

excessive representations of violence are a matter of some public interest (Gadow and Sprafkin, 1989). But that is another story.

Bibliography

Aber, J.L., Brown, J.L. and Jones, S.M. (2003) 'Developmental trajectories toward violence in middle childhood: Course, demographic differences, and response to school-based Intervention'. *Developmental Psychology, 39*, (2), 324-348.

American Psychological Association. (2000) 'Violent videos can increase aggression'. *Press Release*, April 23.

Anderson, C.A. (2003) 'Video games and aggressive behavior' In D. Ravitch and J.P. Viteritti (Eds.), *Kid Stuff…Marketing Sex and Violence to America's Children*. Baltimore & London: The John Hopkins University Press, 143-167.

Anderson, C.A. (2004) 'An update on the effects of violent video games'. *Journal of Adolescence*, 27, 113-122.

Anderson, C.A., Berkowitz, L et al. (2003) 'The influence of media violence on youth'. *Psychological Science in the Public Interest, 4*, 81-110.

Anderson, C.A. and Bushman, B.J. (2002) 'The effects of media violence on society'. *Science, 295*, 2377-2379.

Anderson, C.A., Carnagey, N.L. and Eubanks, J. (2003) 'Exposure to violent media: The effects of songs with violent lyrics on aggressive thoughts and feelings'. *Journal of Personality and Social Psychology, 84*, (5), 960-971.

Anderson, C.A. and Dill, K.E. (2000) 'Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life'. *Journal of Personality and Social Psychology, 78,* (4), 772-790.

Anderson, C.A. and Ford, C.M. (1987) 'Affect of the game player: Short term effects of highly and mildly aggressive video games'. *Personality and Social Psychology Bulletin, 12,* 390-402.

Anderson, C.A., Funk, J.B. and Griffiths, M.D. (2004) 'Contemporary issues in adolescent video game playing: brief overview and introduction to the special issue'. *Journal of Adolescence, 27*, (1), 1-3.

Anderson, C.A. and Murphy, C.R. (2003) 'Violent video games and aggressive behaviour in young women'. *Aggressive Behavior, 29*, (5), 423-429.

Ballard, M.E. and Lineberger, R. (1999) 'Video game violence and confederate gender: Effects on reward and punishment given by college males'. *Sex Roles: A Journal of Research, 41*, 541-558.

Ballard, M.E. and Weist, J.R. (1996) 'Mortal Kombat™: The effects of violent videogame play on males' hostility and cardiovascular responding'. *Journal of Applied Social Psychology, 26,* 717-730.

Bandura, A. (1994) 'Social cognitive theory of mass communication' In: J. Bryant and D. Zillman (eds.) *Media Effects: Advances in Theory and Research.* Hillsdale, NJ: Lawrence Earlbaum, 61-90.

Barker, M. and Petley, J. (eds.) (2001) *Ill Effects: the Media/Violence Debate.* London: Routledge.

Bartholow, D.B. and Anderson, C.A. (2002) 'Effects of violent video games on aggressive behavior: Potential sex differences'. *Journal of Experimental Social Psychology, 38*, (3), 283-290.

Bensley, L. and Eenwyk, J. (2001) 'Videogames and real life aggression: review of the literature'. *Journal of Adolescent Health, 29*, 244-257.

Blumstein, A. and Wallman, J. (eds,) (2000) *The Crime Drop in America*. Cambridge: Cambridge University Press.

Brennan, P.A. et al. (2003) 'Process in relation to early-onset persistent aggression in boys and girls'. *Developmental Psychology, 39*, (2), 309-323.

Broidy, L.M. et al. (2003) 'Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study'. *Developmental Psychology, 39*, (2), 222-245.

Browne, K. and Pennell, A. (1998) 'The effects of video violence on young offenders'. *Research Findings No 65*. London: Home Office Research and Statistics Directorate.

Browne, K. and Pennell, A. (2000) 'The influence of film and video on young people and violence' In: G. Boswell (ed.) *Violent Children and Adolescents*: *Asking the Question Why*. London: Whurr Publishers.

Buckingham, D. (1996) *Moving Images: Understanding Children's Emotional Responses to Television.* Manchester: Manchester University Press.

Burns, B.J. et al. (2003) *Treatment, Services and Intervention Programs for Child Delinquents*. Washington D.C: Department of Justice, Office of Juvenile Justice and Delinquency Prevention.

Bushman, B.J. and Anderson, C.A. (2002) 'Violent video games and hostile expectations: a test of the General Aggression Model'. *Personality and Social psychology Bulletin*, 28, 1679-1686.

Centrewall, B.S. (1989) 'Exposure to television as a cause of violence' In: G. Comstock (ed.) *Public Communication and Behavior Vol. 2*, 1-58, New York: Academic Press.

Centrewall, B.S. (1992) 'Television and Violence: the scale of the problem and where we go from here'. *Journal of the American Medical Association, 267*, 3059-3063.

Charlton, T., Gunter, B. and Hannan, A. (2000) *Broadcast Television Effects in a Remote Community*. Hillsdale, New Jersey: Lawrence Erlbaum.

Charlton, T. and Gunter, B. (1999) 'TV violence effects: exceptionally vulnerable viewers?' *Emotional and Behavioural Difficulties, 4,* (1), 36–45.

Christakis, D.A. et al. (2004) 'Early television exposure and subsequent attentional problems in children'. *Pediatrics, 113*, 708-713.

Christopherson, O., Thorpe, K. and Upson, A. (2004) *Crime in England and Wales, Quarterly Update to December, 2003*. Home Office: National Statistics

Clark, D.G. and Blankenberg, W.B. (1971) 'Trends in violent content in selected media' In G.A. Comstock and E.A. Rubenstein (eds.) *Television and Social Behaviour Volume 1*. Washington DC: US Government Printing Office, 188-243.

Coates, B., Pusser, H.E. and Goodman, I. (1976) 'The influence of 'Sesame Street' and 'Mister Rogers' Neighbourhood' on children's social behavior in the preschool'. *Child Development, 47*, 138–144.

Colwell, J. and Kato, M. (2003) 'Investigation of the relationship between social isolation, self-esteem, aggression and computer game play in Japanese adolescents. *Asian Journal of Social Psychology*, 6, 149-158.

Colwell, J. and Payne, J. (2000) 'Negative correlates of computer game play in adolescents'. *British Journal of Psychology, 91*, 295–310.

Comstock, G and Paik, H. (1991) *Television and the American Child*. San Diego, California: Academic Press.

Cumberbatch, G. (1994) 'Legislating mythology: video violence and children'. *Journal of Mental Health*, 3, 485-494.

Cumberbatch, G. (1995) *Media Violence: Research Evidence and Policy Implications*. Strasbourg: Council of Europe.

Cumberbatch, G. (2000) 'Only a Game?' *New Scientist*, 10 June, (2242), 44–45.

Cumberbatch, G. (2002) *Where do you draw the line? Attitudes and Reactions of Video Renters to Sexual Violence in Film.* London: BBFC.

Cumberbatch, G. Gauntlett, S. et al ((2002) *Content Analysis of Violence on British Terrestrial Television: Year on Year Comparisons, 1993-2001*. London: BSC, ITC and BBC.

Cumberbatch, G. and Howitt, D. (1987) *A Measure of Uncertainty: the Effects of the Mass Media*. London: John Libbey

Cumberbatch, G., Jones, I. and Lee, M. (1988) 'Measuring Violence on Television' *Current Psychological Research and Reviews*, 7 (1), 173-204.

Cumberbatch, G. Maguire,A. and Woods,S. (1993) *Children and Video Games: An Exploratory Study*. Applied Psychology Monograph. Birmingham: Aston University.

Cumberbatch, G, Wood, G and Littlejohns, V. (2001) *Television: The Public's view 2000*. London: ITC.

Dennison, B.A., Russo, T.J., Burdick, P.A. and Jenkins, P.L. (2004) 'An Intervention to reduce television viewing by preschool children'. *Archives of Pediatrics & Adolescent Medicine, 158*, (2), 170-176.

Dill, K.E. and Dill, J.C. (1998) 'Video game violence: a review of the literature'. *Aggression and Violent Behavior, 3, (*4), 407-428.

Dionne, G. et al. (2003) 'Physical Aggression and Expressive Vocabulary in 19-Month-Old Twins'. *Developmental Psychology, 39*, (2), 261-273.

Dominick, J.R. (1984) 'Videogames, television violence and aggression in teenagers'. *Journal of Communication, 34,* 136-147.

Dudley, W. (1999) *Media Violence: Opposing Viewpoints*. San Diego, California: Greenhaven Press.

Durkin, K. and Barber, D. (2002) 'Not so doomed: computer game play and positive adolescent development'. *Applied Developmental Psychology*, 23, 373-392.

Durkin, K. and Aisbett, K. (1999) *Computer Games and Australians Today*. Sydney, NSW: Office of Film and Literature Classification.

Editorial (2003) 'A calm view of video violence'. *Nature, 424*, (6947), 355.

Eron, L.D. (1993) 'No doubt about it, media violence affects behavior'. *Media and Values, 64*, 14.

Farrington, D.P. (1993) 'Childhood origins of teenage antisocial behaviour and adult social dysfunction'. *Journal of the Royal Society of Medicine, 86,* 13–17.

Firmstone, J. (2002) *Discerning Eyes: Viewers on Violence*. Luton: University of Luton Press.

Flannery, D.J. et al. (2003) 'Initial behavior outcomes for the peacebuilders universal school-based violence prevention program'. *Developmental Psychology, 39*, (2), 292-308.

Fleming, M.J. and Rickwood, D.J. (2001) 'Effects of violent versus non-violent video games on children's arousal, aggressive mood, and passive mood'. *Journal of Applied Social Psychology*, 31, 2047-2071.

Flood-Page, C., Campbell, S., Harrington, V. and Miller, J. (2000*) Youth Crime: Findings from the 1998/99 Youth Lifestyles Survey. Home Office Research Study 209*. London: Home Office.

Fowles, J. (1999) *The Case for Television Violence*. Thousand Oaks, California: Sage.

Frick, P.J. et al. (2003) 'Callous-unemotional traits and developmental pathways to severe conduct problems'. *Developmental Psychology, 39,* (2), 246-260.

Funk, J.B., Hagan, J. et al. (2002) 'Aggression and psychopathology in adolescents with a preference for violent electronic games'. *Aggressive Behavior, 28*, 134-144.

Funk, J.B. (2003) 'Violent video games: Who's at risk?' In D. Ravitch & J.P. Viteritti (Eds.) *Kid Stuff…Marketing Sex and Violence to America's Children*. Baltimore and London: The John Hopkins University Press, 168-192.

Funk, J.B., Elliott, R. et al. (2003) 'The Attitudes Towards Violence Scale: Child version'. *Journal of Interpersonal Violence, 18*, 186-196.

Funk, J.B., Baldacci, H.B. et al (2004) 'Violent exposure in real life, video games, television, movies and the internet. Is there desensitization?' *Journal of Adolescence*, 27, 23-39.

Gadow, K.D. and Sprafkin, J. (1989) 'Field experiments of television violence'. *Pediatrics, 83*, 399-405.

Gentile, D.A. (ed.) (2003) *Media Violence and Children: A Complete Guide for Parents and Professionals*. Westport, Connecticut, London: Praeger.

Gentile, D.A., Lynch, P.J., Ruh Linder, J. and Walsh, D.A. (2004) 'The effects of violent video game habits on adolescent hostility, aggressive behaviors and school performance'. *Journal of Adolescence, 27*, 5-22.

Gentile, D.A., Walsh, D.A. et al (2004) 'Media violence as a risk factor for children: A longitudinal study'. *Paper presented at the American Psychological Society 16th Annual Convention*: Chicago, Illinois.

Goldstein, J.H. (ed.) (1998) *Why We Watch: The Attractions of Violent Entertainment*. New York: Oxford University Press.

Griffiths, M. (1999) 'Violent video games and aggression: review of the literature'. *Aggression and Violent Behavior*, 4, (2), 203–212.

Gunter, B. (1985) *Dimensions of Television Violence*. Aldershot: Gower Press.

Gunter, B. (1998) *The Effects of Video Games on Children*. Sheffield: Sheffield Academic Press.

Grossman, D. and DeGaetano, G. (1999) *Stop Teaching our Children to Kill: A Call for Action against TV, Movie and Video Game Violence*. New York: Random House.

Hagell, A. and Newburn T. (1994) *Young Offenders and the Media.* London: Batisford.

Halloran, J. D., Brown, R. L. and Chaney, D.C. (1970) *Television and Delinquency*. Leicester: Leicester University Press.

Hancox, R.J., Milne, B.J. and Poulton, R. (2004) 'Association between child and adolescent television viewing and adult health: a longitudinal birth cohort study'. *The Lancet, 364*, (9430), 257-262.

Haninger, K., Ryan, M.S. and Thompson, K.M. (2004) 'Violence in teen-rated video games'. *Medscape General Medicine*.

Harris, J. (2001*) 'The Effects of Computer Games on Young Children – a review of the research. RDS Occasional Paper No 72*: London, Home Office.

Hawkins, J.D. et al. (2000) 'Predictors of youth violence'. *Juvenile Justice Bulletin*, U.S. Department of Justice.

Heins, M. and Bertin, J.E. (eds.) (2002) 'Brief *Amici Curiae* of Thirty-Three Media Scholars in Support of Appellants, and Supporting Reversal'. *United States Court of Appeals for the Eighth Circuit*, Interactive Digital Software Association v St. Lois County September 24th 2002.

Hennigan, K.M. et al. (1982) 'Impact of the introduction of television on crime in the United States'. *Journal of Personality and Social Psychology, 42*, 461-477.

Hill, A. (1997) *Shocking Entertainment: Viewer Response to Violent Movies*. Luton: John Libbey Media.

Hind, P.A. (1995) 'A study of reported satisfaction with differentially aggressive computer games amongst incarcerated young offenders'. *Issues in Criminological and Legal Psychology*, 22, 28-36.

Himmelweit, H. T., Oppenheim, A. N. and Vince, P. (1958) *Television and the Child: An Empirical Study of the Effect of Television on the Young.* London: Oxford University Press.

Hogben, M. (1998) 'Factors moderating the effect of television aggression on viewer behavior'. *Communication Research, 25,* 220-247.

Home Affairs Select Committee (1994) *Fourth Report: Video Violence and Young Offenders*. London: Home Office.

Hood, R. and Roddam, A. (2000) 'Crime, sentencing and punishment' In: A.H. Halsey and J. Webb (eds.) *British Social Trends*. London: Macmillan Press, 675-709.

Howitt, D. and Cumberbatch, G. (1974) 'Audience perceptions of violent television content'. *Communication Research*, 1, (2), 204-233.

Huesmann, L.R. (1999) *Violent videos and violent video games: why do they cause violence and why do they sell?* Testimony before the Senate Committee on commerce, science and transportation regarding 'marketing violence to children', May 4, 1999.

Huesmann, L. R. and Eron, L. D. (eds.) (1986) *Television and the Aggressive Child: A Cross-National Comparison.* Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Huesmann, L.R., Moise, J.F. and Podolski, C.L. (1997) 'The effects of media violence on the development of antisocial behavior' In: D.M. Stoff, J. Breiling and J. Maser (eds.) *Handbook of Antisocial Behavior*. New York: John Wiley.

Huesmann, L.R., Moise-Titus, J., Podolski, C. and Eron, L.D. (2003) 'Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992'. *Developmental Psychology, 39*, (2), 201-221.

IDSA. (2001) *Video Games & Youth Violence: Examining the Facts*. International Washington D.C: Interactive Digital Software Association.

Irwin, A.R. and Gross, A.M. (1995). 'Cognitive tempo, violent video games, and aggressive behavior in young boys'. *Journal of Family Violence, 10,* 337-350.

Johnson, J.G. et al. (2002) 'Television viewing and aggressive behaviour during adolescence and adulthood'. *Science, 295*, 2468-2471.

Josephs, J. (1993) *Hungerford: One Man's Massacre*. London: Batisford.

Jordon, A. and Woodward, E. (2003) *Parents' Use of the V-Chip to Supervise Children's Television Use*. Washington D.C: The Annenberg Public Policy Centre.

Kayany, J.M. and Yelsma P. (2000) 'Displacement effects of on-line media'. *Journal of Broadcasting and Electronic Media, 44*, (2), 215-229.

Kaye, B.K. and Johnson, T.J. (2003) 'From here to obscurity? Media substitution theory and tradition in an on-line world.' *Journal of the American Society for Information Science and Technology, 54*, (3), 260-273.

Kent, S.L. (2001) *The Ultimate History of Video Games*. Roseville, California: Prima Publishing

Kershaw, C., Budd, T. et al (2000) *The 2000 British Crime Survey*. London: Home Office.

Kiewitz, C. and Weaver, J.B. (2001) 'Trait aggressiveness, media violence and perceptions of interpersonal violence'. *Personality and Individual Differences*, 31, (6), 815-835.

Krahé, B. and Möller I. (2004) 'Playing violent electronic games, hostile attribution style and aggression related norms in German adolescents'. *Journal of Adolescence*, 27, 53-69.

Kirsh, S.J. (2003) 'The effects of violent video games on adolescents. The overlooked influence of development'. *Aggression and Violent Behavior, 8*, (4), 377-389.

Kruttschnitt, C., Heath, L. and Ward, D.A. (1986) 'Family violence, television viewing habits, and other adolescent experiences related to violent criminal behavior'. *Criminology*, 24, 235-267.

Kubey, R and Csikszentmihalyi,M. (2002) 'Television addiction is no mere metaphor'. *Scientific American*. Feb 23 2002.

Lanzartigues, A., Doukoure, M., Saint-Andre, S. and Lemonnier, E. (2003) 'Do certain characteristics of new forms of parenting contribute to violence among children?' *Annales Medico-Psychologiques, Revue Psychiatrique, 161*, (4), 265-271.

Lewis, C. (ed.) (2003) *Modelling Crime and Offending: Recent Developments in England and Wales*. *Occasional Paper no. 80*. London: Home Office.

Lewis, V., Kellett, M. et al (eds.) (2004) *The Reality of Research with Children and Young People*. Thousand Oaks, California: Sage Publications.

Loeber, R., Farrington, D.P. and Petechuk, D. (2003) *Child Deliquency Bulletin*, May 2003. Washington DC: US Department of Justice.

Lyn, R., Hampson, S. and Agahi, E. (1989) 'TV violence and aggression: a genotype-environment correlation and interaction theory'. *Social Behavior and Personality,* 17, 243-164.

Marvin, C. (2000) 'Review essay on violence in media'. *Journal of Communication, 50*, (1), 142-149.

Mastronardi, M. (2003) 'Adolescence and media'. *Journal of Language and Social Psychology, 22*, (1), 59-72

McCord, J., Spatz, C. and Crowell, N.A. (eds.) (2003) *Juvenile Crime Juvenile Justice.* Washington D.C, National Academy of Sciences: National Academy Press.

McLeod, J.M., Atkin, C.K. and Chaffee, S.H. (1972) 'Adolescents, parents and television use: Self report and other report measures from Maryland and Wisconsin samples' In G. G. Comstock and E. A. Rubenstein (eds.) *TV and Social Behavior, Volume 3*. Washington DC: US Government Printing Office.
Melhuish, E.C. (2004) *A Literature Review of the Impact of Early Years Provision on Young Children, With Emphasis Given to Children From Disadvantaged Backgrounds*. London: Institute for the Study of Children, Families & Social Issues.

Messner, S.F. (1986) 'Television violence and violent crime: an aggragate analysis'. *Social Problems, 33*, (3), 218-235.

Morrison, D.E., MacGregor, B. et al (1999) *Defining Violence: the Search for Understanding.* Luton: University of Luton Press.

Murry, J.P. (2003) 'The violent face of television: Research and discussion' In E.L. Palmer and B.M. Young (eds.) *The Faces of Televisual Media: Teaching, Violence, Selling to Children.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Noble, G. (1975) *Children in Front of the Small Screen.* London: Constable.

Oliver, M.B. (2002) 'Individual differences in media effects' In J. Bryant and D. Zillman (eds.) *Media Effects: Advances in Theory and Research*. Mahwah, California: Lawrence Erlbaum, 507- 524.

Orne, M.T. (1962) 'On the social psychology of the psychological experiment'. *American Psychologist, 17*, 776-783.

O'Toole, M.E. (2000) *The School Shooter: A Threat Assessment Perspective*. Virginia: Federal Bureau of Investigation.

Paik, H. and Comstock, G. (1994) 'The effects of television violence on anti-social behavior: a meta-analysis'. *Communication Research*, 21, 516-546

Perloff, R.M. (2002) 'The third person effect' In J. Bryant and D. Zillman (eds.) *Media Effects: Advances in Theory and Research*. Mahwah, New Jersey: Lawrence Erlbaum, 507-524

Pettit, G.S. and Dodge, K.A. (2003) 'Violent children: Bridging developmental, intervention, and public policy'. *Developmental Psychology, 39*, (2), 187-188.

Potter, W.J. (1999) *On Media Violence*. Thousand Oaks, California: Sage.

Potter, W.J. (2003) *The 11 Myths of Media Violence*. Thousand Oaks, California: Sage Publications.

Potter, W.J. and Tomasello, T.K. (2003) 'Building upon the experimental design in media violence research: The importance of including receiver interpretations'. *Journal of Communication, 53*, 315-329.

Radford, B. and Bartholomew, R. (2001) 'Pokémon contagion: photosensitive epilepsy or mass psychogenic illness?' *Southern Medical Journal*, 94, (2), 197-204.

Radvitch, D. and Viteritti, J.P. (2003) 'Toxic lessons: Children and popular culture' In D. Ravitch and J.P. Viteritti (eds.) *Kid Stuff…Marketing Sex and Violence to America's Children*. Baltimore & London: The John Hopkins University Press, 1-18.

Raessens, J. and Goldstein, G. (2004) *Handbook of Computer Game Studies*. Cambridge, Mass: MIT Press.

Reichhardt, T. (2003) 'Video violence: Playing with fire?' *Nature, 424*, 367-368.

Robinson, T.N. (2003) 'The effects of cutting back on media exposure' In D. Ravitch and J.P. Viteritti (eds.) *Kid Stuff…Marketing Sex and Violence to America's Children*. Baltimore & London: The John Hopkins University Press, 193-213.

Rosenkoetter, L.I., Rosenkoetter, S.E., Ozretich, R.A. and Acock, A.C. (2004) 'Mitigating the harmful effects of violent television'. *Journal of Applied Developmental Psychology, 25*, (1), 25-47.

Rosnow, R.L. and Rosenthal, R. (1997) *People Studying People: Artefacts and Ethics in Behavioral Research.* New York: Freeman.

Rubin, A.M. (2002) 'The uses and gratifications perspective on media effects' In J. Bryant and D. Zillman (eds.) *Media Effects: Advances in Theory and Research*. Mahwah, New Jersey: Lawrence Erlbaum, 525-548.

Rutter, M. and Smith, D. (1995) 'Towards causal explanations of time trends in psychosocial disorders of youth' In: M. Rutter and D.J. Smith (eds.) *Psychosocial Disorders in Young People: Time Trends and Their Causes.* New York: John Wiley..

Sancho, J. and Glover, J. (2003) *Conflict Around the Clock: audience reactions to media coverage of the 2003 Iraq war*. London: ITC.

Salwen, W.B. and Dupagne, F. (2001) 'Third person perception of television violence'. *Media Psychology*, 3, 211-236.

Schramm, W., Lyle, L. and Parker, E.B. (1961) *Television in the Lives of Our Children*: Stanford, California**:** Stanford University Press.

Sherry, J.L. (2001) 'The effects of violent video games on aggression. A meta-analysis'. *Human Communication Research, 27*, 409-431.

Slater, M.D., Henry, K.L., Swaim, R.C. and Anderson, L.L. (2003) 'Violent media content and aggressiveness in adolescents: A downward spiral model'. *Communication Research, 30*, (6), 713-736.

Slater, M.D. (2003) 'Alienation, aggression and sensation seeking as predictors of adolescent use of violent film, computer, and website content'. *Journal of Communication, 53*, 105-121.

Singer, J.L. and Singer, D.G. (1986) *Television, Imagination and Aggression: a study of pre-schoolers*. Hillsdale, New Jersey: Lawrence Erlbaum.

Singer, M.J., Miller, D.B. et al (1999) 'Contributors to violent behavior among elementary and middle school children'. *Pediatrics, 104*, 878-884.

Smith, C. and Allen, J. (2004) *Violent Crime in England and Wales.* London: Home Office, National Statistics.

Smith, S.L. and Donnerstein, E. (1998) 'Harmful effects of exposure to media violence: learning of aggression, emotional desensitisation and fear' In: R.G. Geen and E. Donnerstein (eds.) *Human Aggression: Theories, Research and Implications for Social Policy*. San Diego, California: Academic Press, 168–204.

Smith, S.L. and Donnerstein, E. (2003) 'The problem of exposure: Violence, sex, drugs, and alcohol' In D. Ravitch and J.P. Viteritti (eds.) *Kid Stuff…Marketing Sex and Violence to America's Children*. Baltimore and London: The John Hopkins University Press, 65-95.

Smith, P.K., Smees, R. and Pellegrini, A.D. (2004) 'Play fighting and real fighting: Using video playback methodology with young children'. *Aggressive Behavior, 30*, (2), 164-173.

Sorenson, H.D. and Jessen, C. (2000) 'It isn't real: Children, computer games, violence and reality' In C. van Feilitzin and U. Carlsson, (eds.), *Children in the New Media Landscape*. Goteborg: UNESCO.

Sparks, G.D. and Sparks, C.W. (2002) 'Effects of media violence' In J. Bryant and D. Zillman (eds) *Media Effects: Advances in Theory and Research*. Mahwah, New Jersey: Lawrence Erlbaum, 269-286.

Tannenbaum, P.H. and Zillmann, D. (1975) 'Emotional arousal in the facilitation of aggression through communication' In: L. Berkowitz (ed.) *Advances in Experimental Social Psychology, 8,* New York: Academic Press, 149-192.

Tolan, P.H., Gorman-Smith, D. and Henry, D.B. (2003) 'The development psychology of urban males' youth violence'. *Developmental Psychology, 39*, (2), 274-291.

Uhlmann, E and Swanson, J. (2004) 'Exposure to violent video games increases automatic aggressiveness'. *Journal of Adolescence*, 27, 41-52.

Unsworth, G. and Ward, T. (2001) 'Video games and aggressive behaviour'. *Australian Psychologist*, 36, 184-192.

Vandewater, E.A., Mi-suk Shim and Caplovitz, A.G. (2004) 'Linking obesity and activity level with children's television and video game use'. *Journal of Adolescence, 27*, 71-85.

Van Schie, E.G.M. and Wiegman, O. (1997) 'Children and videogames: leisure activities, aggression, social integration and school performance'. *Journal of Applied Social Psychology, 27*, (14), 1175–1194.

Viemero, V. (1986) *Relationship between Filmed Violence and Aggression.* Turkin, Finland: Reports from the Department of Psychology at Abo Akademi, Monograph Supplement 4.

Villani, S. (2001) 'Impact of media on children and adolescents: A 10-year review of the research'. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, (4), 392-401.

Walters, G.D. (2004) 'Understanding the popular appeal of horror cinema: an integrated-interactive model. *Journal of Media Psychology*, 9, (2), 1-35.

Wartella, E., Olivarez, A. and Jennings, N. (1998) 'Children and television violence in the USA' In U. Carlsson and C. von Felitzen (eds.) *Children and Media Violence*. Göteborg, Sweden: UNESCO, 55–62.
`

Williams, T.M. (ed.) (1986) *The Impact of Television: A Natural Experiment in Three Communities*. New York: Academic Press.

Wolf, M.J.P. and Perron, B. (2003) *The Video Game Theory Reader*. New York: Taylor and Francis.

Zillman, D. and Johnson, R. (1973) 'Motivated aggressiveness perpetrated by exposure to aggressive films and reduced by non-aggressive films'. *Journal of Research in Personality, 7*, 261-276.

Zimring, F.F. and Hawkings, G. (1997) *Crime is not the Problem: Lethal Violence in America*. New York, NY: Oxford University Press.