

The impact of media technologies on child development and wellbeing¹

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Rights context

Article 17 of the United Nations Convention on the Rights of the Child states that “States Parties recognize the important function performed by the mass media and shall ensure that the child has access to information and material from a diversity of national and international sources, especially those aimed at the promotion of his or her social, spiritual and moral well-being and physical and mental health. To this end, States Parties shall:

- a) Encourage the mass media to disseminate information and material of social and cultural benefit to the child and in accordance with the spirit of article 29;
- b) Encourage international co-operation in the production, exchange and dissemination of such information and material from a diversity of cultural, national and international sources;
- c) Encourage the production and dissemination of children’s books;
- d) Encourage the mass media to have particular regard to the linguistic needs of the child who belongs to a minority group or who is indigenous;
- e) Encourage the development of appropriate guidelines for the protection of the child from information and material injurious to his or her well-being, bearing in mind the provisions of articles 13 and 18”.

Article 13, supports the rights of children to seek and receive information and ideas of all kinds, subject to restrictions to protect public health. Article 18, supports parents in their primary responsibility for the upbringing and development of their children, but requires that institutions support parents in this role.

Potential benefits of media technologies

Media technologies (TV, video, games, Internet, music, mobile phones) have brought about a substantial change in the experience of childhood in our society. These changes leave many parents unprepared for the challenge on how to regulate their child’s time with such technologies. There is now good evidence about the impact on children from media technologies, and that this constitutes a health issue.

However, the utilisation of media technologies in Australian households clearly indicates that families like what these have to offer. International research has demonstrated that educational programs benefit children’s knowledge and academic abilities. This can begin in early childhood, where choice of program makes a considerable difference to children’s skills and knowledge when they enter school. In early childhood, television can provide children with a broader range of life situations and possibilities to explore through their play.

Children can use media to increase their understanding of the world around them as well as teach positive social behaviours. These benefits can last through to adolescence. Television viewing has been studied in children who are academically gifted, with results suggesting that selective viewing can promote academic abilities. Furthermore, parents of gifted children are more likely to see the potential benefits of educational TV programs and make more selective viewing choices.

Video games involving information, academic content and problem-solving have been shown to accelerate children’s learning. They can be particularly useful for children who have learning problems. Similarly, the breadth of information available on the Internet is clearly able to broaden children’s knowledge and

¹ For internal distribution only. Much of the information has been cut and pasted from the original and while attributed at all times to the source, has not been reworded.

understanding of the world. (Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004)².

The benefits and implications of using computers and other media technologies in formal education have not been covered in this compilation of research findings.

Factors that influence media-related outcomes

- Children with emotional or developmental problems are more likely to have difficulty understanding television and advertising in the same way as their peers. This group of children is likely to be more vulnerable to the potentially harmful consequences of media content.
- The extent to which children up the age of 10 years are able to understand the full reality of television programs depends on their life experiences and knowledge of television techniques. The more TV children watch, the less likely it is that they will have a mature understanding of how television works.
- The growing media driven perception that streets and neighbourhoods are unsafe is likely to increase the degree to which parents encourage their children to remain indoors. The 2002 NSW child health survey 5 asked parents where children were allowed to play when not at school or in care. The most popular area was the back yard (69%) followed by inside the house (58%). By contrast, around 29% were allowed to play in the park, 24% at a friends or relatives, 22% at a neighbour's house and only 11 percent on the street.
- Parental attitudes play a large role in determining what children watch. Parents' attitudes were related to social, educational (level of parent education) and economic (level of family income) factors. Parents who believed that TV was beneficial to children were more likely to choose educational programs for their children. By contrast, parents who have not had opportunities for higher education are more likely
- To allow their children to watch what they want, and have the television on more during the day.
- Similar influences related to use of video games. A Queensland study of video game use found that the time spent and type of video games played was closely related to parents' understanding of the technology, and beliefs about the possible benefits and harms of different games. The more parents understood and discussed these products, the greater the likelihood that they had clearly defined guidelines for how their children used these games.
- Specific family factors also influence viewing behaviour. If there are more televisions, there is more television viewing. Older children tend to choose programs when there are siblings in the house, which means that the younger children may be watching programs more suitable to older age groups.
- Children who are unsupervised when they come home from school are liable to watch a good deal more TV than other children. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).

Usage

Television, videos and DVDs

- Deakin University Centre for Physical Activity and Nutrition Research study of 800 children found 40% of families had 2 TV sets with 32% of boys and 25% of girls aged 10 to 12 having a TV in their bedroom. Another study by the centre found 20% of children ate their dinner in front of TV at least 4 times a week. (*Children Living in Active Neighbourhoods* project, Centre for Physical Activity and Nutrition Research, Deakin University)
- Most families with children aged 8 to 17 have three or more televisions in their home and three or more mobile phones. Almost every family home has a computer (98 per cent) and DVD player (97 per cent). (*Media and Communications in Australian Families 2007* ACMA.
- In Australia, children from the aged 5 to 14 years overwhelmingly listed watching TV or videos as an activity (as opposed to a physical activity).
- A 2002 Federal Cultural Ministers Council report concluded that electronic and computer games were more popular as a pastime than active pursuits such as riding bikes, skateboarding or rollerblading.
- 53% of children have TVs in their bedrooms;
- 29% have a VCR in the bedroom;
- 16% had their own computer in the bedroom;

² *Children and the media: Advocating for the future* The Royal Australasian College of Physicians, 2004) report is supported by an extensive reference list

- Technologies in the bedroom were more likely for single children, boys, and where families subscribed to pay TV;
- 14% of children aged 2 to 7 years watched TV alone;
- Over 70% of the parents said there were rules about how much TV their children watched. Rules decline with age as 47% of 8 to 13 have rules and this declines to 25% of 14 and older
- Australian children begin watching television from an early age, with an average of 44 minutes a day at four months building to two and a half hours by four years. In 2001, almost half of children aged 5 to 12 years watched more than two hours per day, and 15 percent spent over an hour per day playing video games. ((Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004).
- 97% of children watched television, videos or DVDs
- Children spent more time 'watching television, videos or DVDs', on average, on this activity than on any of the other. Children spent an average of approximately 20 hours in two week viewing television programs, videos or DVDs. (2006 Survey of Children's Participation in Cultural and Leisure Activities ABS)

Computer and internet usage

- Nine-in-ten family homes with children have the internet, and 76 per cent of these homes have broadband compared to just seven per cent in 1995. More than three-quarters of family homes have a games console.
- Almost all parents with children aged 8 to 17 see the internet as beneficial for their children, mainly as providing learning or educational opportunities. Similarly, four-fifths of these parents see benefits in their child's use of a mobile phone, particularly for safety and security.
- Families say electronic media and communications activities take up around half of young people's total discretionary time – a proportion that has not changed since 1995. Children themselves demonstrate a balanced attitude to the use of electronic media and communications. When given a preference, young people often prefer to do non-media activities and socialise with other people. (Media and Communications in Australian Families 2007 ACMA.
- Playing electronic or computer games fell 7 percentage points between 2003 and 2006 from 71% to 64%.
- In 2000 and 2003, 95% of children aged 5 to 14 years used a computer during or outside of school hours. For 2006 this figure fell slightly to 92%.
- The percentage of children accessing the Internet which, after increasing significantly between 2000 and 2003 (from 47% to 64% of children), did not change noticeably (65% for 2006).
- Children spent an average of 8 hours per fortnight on electronic and computer games.
- In the 12 months to April 2006 the majority of children aged 5 to 14 years (92% or 2,463,300) used a computer either during or outside school hours. Of these children, it is estimated that:
 - 90% used a computer at school
 - 89% used a computer at home
 - 37% used a computer at someone else's home
 - 12% used a computer at a public library.
- Use of a computer was similar for males and females. Computer usage varied with age, ranging from a participation rate of 76% for 5 year olds to 99% for children aged 13 years.
- For 5 to 8 year olds, playing games was the most common activity, with 88% taking part at least once in the previous year. By comparison, 70% of children aged 12 to 14 years were reported to have taken part in this activity. Playing games was the only home computer activity which showed a decrease with age. Rates of computer use for school or educational activities, Internet based activities, and particularly emailing or messaging, were substantially higher for 12 to 14 year olds than for 5 to 8 year olds.
- In the 12 months to April 2006, an estimated 1,730,700 (65%) children aged 5 to 14 years accessed the Internet either during or outside of school hours. This represents 70% of the total number of children who used a computer. The proportion of children accessing the Internet was the same for both males and females (65%). Internet access varied across the age groups with 19% of children aged 5 years accessing the Internet compared with 90% of 13 year olds.
- The most common activities undertaken using the Internet at home were school or educational activities (82%), followed by playing on-line or Internet based games (51%). For 5 to 8 year olds, it was playing on-line or Internet based games and school or educational activities (both 62%), followed by accessing the Internet for leisure (38%).

- Approximately 86% (437,600) of 9 to 11 year olds used the Internet at home for school or educational activities. Playing on-line or Internet based games (54% or 276,000), accessing the Internet for leisure (44% or 224,000) and emailing or messaging (42% or 214,600) were the next most reported activities for 9 to 11 year olds.
- An estimated 90% (576,700) of 12 to 14 year olds accessed the Internet at home for school or educational activities. This was followed by emailing or messaging (68% or 434,100), accessing the Internet for leisure (52% or 330,100), playing on-line or Internet based games (43% or 275,100) and downloading music from Internet sites (40% or 253,400).
- An estimated 73% (1,077,000) of children who access the Internet at home did so more than once a week and 25% (371,400) did so every day. About 39% (248,200) of 12 to 14 year olds, 18% (92,100) of 9 to 11 year olds and 10% (31,100) of 5 to 8 year olds accessed the Internet daily. (2006 Survey of Children's Participation in Cultural and Leisure Activities ABS)
- Young Australians are on line for longer than their parents think they are. Parents believed it was 6 hours a week whereas the young people reported an average of 12 hours (Symantec Study 2007 reported by Michael Carr-Gregg)
- A survey of 4 to 5 year olds attending preschool (N=125) suggests that young children were accessing computers in a variety of ways that develop a range of computer skills, knowledges and dispositions. It indicates that there is considerable use of computer games and that the use of drawing tools features strongly, with nearly half of the children undertaking this activity(48%).
- Almost one third of the children (39%)use the internet primarily for accessing websites such as 'The Wiggles'. Such sites have been designed for the young user but still require levels of competence with the mouse and other aspects of the computer. Similarly, many of the games call for mouse skills in order for the user to navigate their way around the games environment. The eye-hand coordination needed for this competence is a very different skill from the traditional eye-hand coordination that has been a feature of early childhood development.
- Gender differences are evident in access to computers with 81% of boys having access in the home compared to 71% of girls while 11.1% of girls had no access to a computer at home or at the home of relatives or friends compared to 1.3% of boys.
- There was also a marked gender difference in use to play games with boys being more involved – 72% boys cf 42% girls for non educational and 83% cf 73% for educational games. Parents report that boys were also more likely to use the internet and to play with the computer in a general sense. The data suggests that the differences between the genders are emerging at a very early age, and that different patterns of computer use may be appearing quite early in children's development. Computer use by preschool children: (Rethinking practice as digital natives come to preschool Robyn Zevenbergen and Helen Logan in *Aust J of Early Childhood* 33(1) 2008)

Impact

There are three broad ways in which electronic media can impact on child development and wellbeing

- In terms of the impact of its content.
- In terms of the impact of interactive activity
- In terms of other activities which it replaces

Content - Areas of potential harm

Child development

Content may be intended and selected (such as music on a CD, a video game, web page or TV program) or unselected (such as advertisements, or 'pop-up' web pages from the internet). The influence of this content on children depends on many factors; for example age, and related developmental factors such as intelligence and social maturity. The key issue with regard to this content is that the media technologies potentially bypass parents, our society's traditional gatekeepers for the developing child. They allow content produced for all manner of reasons to be delivered directly to the mind of the child". (*Children and the media: Advocating for the future* Advocating for the future Royal Australasian College of Physicians (RACP),2004).

- There is growing evidence that babies interacted with television in a meaningful way, particularly interpreting the emotional messages. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP), 2004)
- A US study has found 4 out of 10 babies are regular TV viewers by 3 months and 90% regularly watch TV, DVDs or videos by the time they are two. 29% of parents give their main reason for putting children in front of TV as educational (Herald Sun)

- Developmental paediatrician Dr John Wray says that evidence showed a loud TV in the background could delay young children's language development. He supports a call for TV to be banned for under 3 year olds (Herald Sun 1/5/07)
- Prior to the age of 4 years, children had difficulty understanding that what they were watching was not real. However, young children can detect and respond to emotions on television, and accurately identify and remember facts and action sequences. They can reflect complex content in their play with surprising detail indicating they can absorb the content and emotions without a full understanding of the reasons why.
- Background television had a detrimental impact on play behaviour. In infant and toddler age groups, a study found that the length of toy play and duration of sustained attention span was reduced when the television was on compared with when it was off.
- By the end of their preschool years, most children could understand the difference between program and advertising content; however, the trend to blur content with associated advertising makes this more difficult.,
- In relation to advertising on television up to the age of 8 years children
 - continued to have trouble understanding the full intent of advertisements;
 - were less likely to formally distinguish advertisements from program content;
 - were more likely to believe that the advertising claims were factually true particularly true if the advertisements involved celebrities.
- As children mature, their understanding of advertising also grows. There is no evidence, however, that with this greater understanding the power of advertising to influence their consumer behaviours is lessened.
- Children who watch more television and children from lower-income families are more likely to ask their parents for the products they see advertised;
- Children have more difficulty realising that violence on the news may not represent a direct threat, or that special effects are not real. (Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004).
- In a study of the multimedia activity of 1,039 South Australian young people aged 10–13 years participants categorised as 'extreme screen users' (those in the top quartile of results) were more likely to be male, have low levels of physical activity, devote over 25% of their screen time to video games, get less sleep and be of lower socioeconomic status than their peers.
- One in 10 participants had an average daily screen time of 7 hours, while 1 in 10 participants played video games for almost 3 hours per day. On average, participants' screen time made up 27% of their waking hours.
- Screen time was found to increase according to participants' age and decrease according to participants' socioeconomic status. (Australian and New Zealand Journal of Public Health, 30(2), 2006,
- A study of 238 13 to 16 year olds published in the *Circulation: Journal of the American Heart Association* found those who slept less than 6.5 hours a night were three times more likely to have elevated blood pressure and hence future heart attacks. Researchers argued the “technological invasion of the bedroom” was creating sleep deprivation in adolescents who needed nine hours of sleep. (Age, 19/08/08)

Violence

- In the US, it has been calculated that by the time children reach age 18 they will have seen 16,000 simulated murders and 200,000 acts of violence on television alone. It is likely that Australian and New Zealand statistics are similar.
- The body of evidence linking exposure to violent content to violence-related outcomes for children is now compelling, drawing from over 1000 studies. These include studies of cross-sectional associations, naturalistic observations, longitudinal studies, meta-analyses and direct cause-effect relationship studies. In July 2000, a group of six major health professional organisations: the American Academy of Pediatrics, the American Academy of Child & Adolescent Psychiatry, the American Psychological Association, the American Medical Association, the American Academy of Family Physicians and the American Psychiatric Association, released a joint statement on the consequences for children of exposure to media violence These groups concluded that children who watched more violence on TV and film were more likely to:
 - Become emotionally desensitised to violence;
 - Avoid taking action on behalf of a victim when violence occurs
 - Believe that violence is inevitable

- Believe that violence is an acceptable way of solving conflict
- Believe that world is a violent place, leading to greater anxiety, self-protective behaviours and mistrust of others
- Use violence themselves. (Royal Australasian College of Physicians (RACP);see www.aap.org/advocacy/releases/jsttmtevc.htm).
- Research has shown that children who see a lot of violence on screens are also more likely to:
 - behave aggressively;
 - have aggressive thoughts and unfriendly feelings; and
 - not care about what happens to people who are victims of violence. (Aust Psychological Soc, 2000)
- More recent work has linked violent outcomes to video games. The violent consequences are not limited to hurting others. Children who see risk-taking behaviour in the media are likely to copy these behaviours, and this can lead to personal injury.
- The effects of exposure to violent content in childhood have recently been linked to increased aggressive behaviour even 15 years later. This study followed up 329 adults whose media behaviour was documented when they were children, and demonstrated increased risk of domestic violence and criminal behaviour for the children in the top 20 percent for amount of violent material consumed. This effect was found for females as well as males.
- It is important to note that viewing violent material does not make all children violent. The actual violence resulting from media exposure may be limited to children who are, for various reasons, more vulnerable to this material. For the majority of children there may be subtle shifts in beliefs (more desensitised, more likely to believe violence is inevitable) but not enough to cause harm. (*Children and the media: Advocating for the future* (Royal Australasian College of Physicians (RACP), 2004).

Eating Disorders

- Media has a strong influence on eating disorders. , This occurs by influencing how children think about their bodies. There has been concern raised about the increasing numbers of pro-anorexia and pro-bulimia websites that provide advice to teenagers and encourage these eating disorders. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).

Harmful Substances

- In 1997, a US analysis has found that alcohol, tobacco or illicit drugs were present in 70 percent of prime time network drama, 95 percent of top grossing movies and half of all music videos. Media exposure has been directly linked to usage of harmful substances with one longitudinal study directly linking amount of media exposure to level of alcohol use in teenagers.
- The tobacco industry has a long history of product placement in youth-appealing movies. Product placement in this context is the provision of product or money by tobacco companies to film producers or actors in exchange for favourable portrayals of the product or its use. Some tobacco companies have stated that they no longer engage in this practice however cigarette branding continues to appear in movies. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- There is a substantial and still growing body of evidence that smoking in film has become a significant factor influencing youth smoking uptake. (Cancer Council of NSW)
- YouTube³ was the fastest growing website from January to June 2006, increasing its browsership by 297%, from a monthly unique audience of 4.9 million to 19.6 million. A greater proportion of 12–17-year olds have visited YouTube than any other demographic group, being 1.5 times more likely than the average web user to visit the site.
- Research on the extent to which smoking was promoted by stealth marketing on YouTube found of the first 50 videos retrieved and assessed by relevance to smoking, 24 contained cigarette smoking imagery, 2 cigar smoking imagery and 21 marijuana smoking imagery. When the videos were sorted by the number of times the video had been viewed, the results were very different. Only one video

³ YouTube is a free service where subscribers can upload videos of any quality (including those shot using mobile phone video recorders), thereby sharing them with a potential audience numbering hundreds of millions. Links to newly posted videos enjoyed by viewers can be easily emailed to others, resulting in popular videos rapidly coming to the attention of large numbers of viewers. Originally intended exclusively for the sharing of consumer-generated videos, the site has evolved rapidly into a highly popular "entertainment destination", which includes clips from television programmes, movies, sporting events and popular music.

(that of a female smoking) appeared in both lists. Of the first 50 videos assessed by number of views, 13 contained cigarette smoking imagery, 1 contained bidi smoking imagery and 8 contained marijuana smoking imagery. Although there was more pro smoking content in our sample, the antismoking videos were more watched. This was largely due to the popularity of the darkly humorous "balcony ad", where a group of smokers cause a balcony to collapse. The smoking fetish and female smoking videos were the most watched of those with prosmoking content. Interestingly, none of the fetish videos featured males. ("YouTube" telling or selling you something? Tobacco content on the YouTube video-sharing website, Becky Freeman, Simon Chapman, The University of Sydney, Sydney,

Suicide

- Reporting and portrayal of suicidal behaviour in the media may facilitate suicidal acts by people exposed to such material. When suicide occurs in clusters it can be a result of young people imitating others who have recently committed suicide.
- There is concern that reporting and portrayal of suicide in the media may encourage children to copy. This influence of the media is greater when the method of suicide is presented in detail, when the report is presented dramatically, when pictures are displayed and when suicides of celebrities are reported. Younger people are more likely to be influenced. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- The review of research demonstrated that there is an association between media portrayal of suicide and actual suicide. Causality was demonstrated that, at least in some cases. Specifically, the association satisfied sufficient criteria to be deemed causal in the case of non-fictional presentations of suicide in newspapers, on television and in books. The evidence is more equivocal in the case of fictional presentations of suicide in films and on television, and in music. (*Suicide and the media a critical review*, Jane Pirkis, and R Warwick Blood, National Mental Health Strategy, 2001)
- There is also evidence that the way suicide is reported can reduce suicide rates. Reporting that positions suicide as a tragic waste and an avoidable loss, and focuses on the devastating impact of the act on others, has been linked to reduced rates of suicide. For example, a 1997 Australian study of reporting of Kurt Cobain's suicide in a range of media found that rates of suicide among 15 - 24 year olds fell during the month following reporting of Cobain's death. Significantly, media coverage of Cobain's death was highly critical of his decision to suicide (Martin, G. and Koo, L. (1997). Celebrity suicide: Did the death of Kurt Cobain affect suicides in Australia? *Archives of Suicide Research*, 3 reported in Mindframe and Mental Helath Project, Media and Suicide Research Findings 2002-2006)
- An inquiry into the suicides of two 16 year old girls found the major factor in their deaths were accessing inappropriate internet web sites
- There are 11,600,000 websites which come up if "How to kill yourself" is googled. (Michael Carr-Gregg, ACER Cyber Safety)

Sexual behaviour

- Effects due to potentially harmful messages about sex in the media may minimise any messages children receive from other sources (such as school sex education programs).
- The sexual content in commercial television has increased steadily, and the potential consequences of sexual contact (pregnancy, sexually transmitted diseases) have not been studied. There is evidence that what children view influences their behaviour. Teenage girls who became pregnant, compared to their non-pregnant peers, watched more soap operas before becoming pregnant, and were less likely to think the leading characters would use birth control. Teenage males with the highest rates of sexual behaviour also watched more television, and were more likely to watch television away from the rest of their family. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).

Sexualisation of children

The sexualisation of children has two aspects. One is the sexualisation of children and adolescents themselves in the media, and the other is the exposure of children to sexualised images, irrespective of whether these include children or not.

- A Senate inquiry into sexualisation of children has blamed the media for increasing the exposure of children to sexual imagery but has baulked at enforcing compulsory standards to limit the sexualisation of children. The inquiry called for a long-term study to be carried out into the premature sexualisation of children and for comprehensive sexual health and relationship education to be run in all schools. (Age, Herald Sun, 27/6/08)

- The most significant sources of premature sexualisation are girls' magazines and advertising material. Television programs, in particular music video programs, teen soap operas like *The O.C.* and reality television shows such as *Big Brother* also play a role.
- Each month twenty per cent of six-year-old girls and almost half of ten- and eleven year-old girls read at least one of the most popular girls' magazines – *Barbie Magazine*, *Total Girl* and *Disney Girl*. These magazines teach their young readers to dance in sexually provocative ways, to idolise highly sexualised young women such as Paris Hilton, Jessica Simpson and Lindsay Lohan, and to have crushes on adult male celebrities – all while they are still in primary school.
- Children are unavoidably exposed to heavily sexualised outdoor advertising as well as to some television advertising. On average, children aged five to eleven watch approximately 20 hours of television or videos each week (ABS 2003, p. 32). Most outdoor and television advertising sexualises adults, but children pick up the message that being sexy is the way to be successful and feel good about oneself.
- In some cases, advertising directly sexualises children.
- The capacity of children to develop healthy body image and self-esteem is compromised by pressure to look like miniature adults.
- Children's general sexual and emotional development can be affected by exposure to advertising and marketing that is saturated with sexualised images and themes. To the degree that children focus on sexualising themselves rather than pursuing other more age-appropriate developmental activities, all aspects of their development may be affected.
- The sexualisation of children also risks normalising and possibly encouraging paedophilic sexual desire for children. (Letting Children Be Children: Stopping the sexualisation of children in Australia, Emma Rush and Andrea La Nauze, Discussion Paper Number 93 2006, The Australia Institute)

Child pornography

- Child pornography is used by paedophiles to desensitise children towards becoming participants in sexual acts. It clearly increases the opportunities for child sex offenders to gain access to child sex material and gain information from similar individuals around the world. ((Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004).
- Police statistics show that the number of young people 15 to 19 years making child pornography outnumbered adult men by 2 to 1. There were also youths aged 10 to 14 years among offenders who had been caught. Numbers of youths involved in producing child pornography has been increasing (*Herald Sun* 2/7/08)
- 84% of boys and 60% of girls of 16-17-year-olds have had exposure to Internet pornography:
- 38% of boys and 2% of girls 16- to 17-year-olds have deliberately looked for sex sites: Just under a quarter of boys and 7% of girls 'accidentally' encounter sex sites every week.
- 73% of boys and 11 % of girls 16- to 17-year-olds have watched X-rated videos:
- About 4-5% of boys identify as frequent (weekly) users of pornography. (*Youth and pornography in Australia: Evidence on the extent of exposure and likely effects* Michael Flood and Clive Hamilton, , The Australia Institute, Canberra, 2003.

Child Mental Health

Television violence may influence children in four ways: making them want to imitate what they see, reducing learnt inhibitions against violent behaviour, desensitising them to violence through repetition, and increasing arousal. Exposure to graphic violence may increase children's symptoms of stress.

- Television news, terrorism, violent crime and natural disasters can traumatise children, leading to nightmares. In one US survey, 37 percent of parents who had preschool children reported that their child had been frightened or upset by a TV story in the previous year.
- More generally, increased television viewing is associated with higher levels of depression and anxiety, although it may be that these mental health problems led children to watch more TV.
- The Internet is being used as a source of information for teenagers about their mental health issues. almost 20%of teenagers in a recent US study had used the Internet to find help for the emotional problems they were experiencing.
- In some cases children may spend more time with the media as a consequence of other problems such as stress or fighting within the family. It is obvious that the more time family members watch television, the fewer opportunities exist for communication within the family and solving any problems. ((Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004).
- Dr Aric Sigman, who is an Associate Fellow of the British Psychological Society and a Member of the Institute of Biology, surveyed 30 scientific papers on television and computer screen viewing.. By the

age of 6, the average British child has spent one complete year in front of a screen, mostly the TV. The meta analysis showed too much TV can contribute to a range of childhood physiological and mental health problems. Mental problems linked to too much TV viewing include autism, poor concentration and Alzheimer's in adulthood. Dr Sigman's advice is that children under 3 years old should not watch any television, while those aged 3 to 5 should only watch half an hour a day at the most. Older kids should be limited to no more than one hour a day. His recommendations were criticized by experts as being unworkable and unrealistic. (Aric Sigman, Biologist, Feb 2007)

The impact of marketing to children

Marketing to children is now big business compared with the 1980s and earlier, when advertising to children was considered less beneficial to sales. Australia and New Zealand continue to have some of the highest rates of advertising to children in the world.

- Each 30 minutes of designated children's television viewing time must have no more than five minutes of advertising. Assuming an average 2½ hours per day viewing, this means that children would see over 9,125 advertisements per year.
- Parents are concerned about the consequences of this marketing enterprise. A US study found:
 - 87% of parents felt advertising made their children too materialistic;
 - 63% felt their children were defined too much by their possessions;
 - 55% indicated they had been successfully pressured by their children to buy products they felt to be 'junk' or 'too expensive';
 - 31% felt they or their partner had to work longer hours to pay for the goods their children felt they needed.
- In Australia and New Zealand children are increasingly recognised as a marketing target group. A recent Australian study interviewed over 600 children between the ages of 7 and 14 years and found that:
 - Children in this age group are 'ad-acceptors'. Less than a third of children routinely changed channels or left the room when advertisements came on;
 - Children had spending power of \$A8.80 per week average pocket money, and \$A160 per year average gifts (birthdays, Christmas). On average, children spent about half this amount, equating to a yearly total of \$A800 million across the country;
 - Children had 'pester power', indicating that they exerted a high level of influence over parent purchasing decisions. This includes significant family decisions such as make of car;
- By inducing children to influence their parents in this way, advertisements lead to greater discord within the family. ((Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004)
- Data, collected from 3,649 14–17-year-olds, showed that the 1 in 5 young people who watch more than 4 hours of television a day would see more than 5 hours of advertisements per week. This group find ads more interesting, are less likely to prefer eating healthy snacks and are 50% more likely to eat chocolate bars on a regular basis than their peers who watch less TV. (*The impact of television viewing on children's attitudes to junk food*, Roy Morgan Research 2005)
- A new arena for advertising is the internet. Advertisers have created a separate market for children. According to the director of Saatchi & Saatchi Interactive, "This is a medium for advertisers that is unprecedented... there's probably no other product or service that we can think of that is like it in terms of capturing kids' interest. Interactive technology is at the forefront of kid culture, allowing us to enter into contemporary kid life and communicate with them in an environment they call their own".
- Children as young as four are being targeted by advertisers on the internet and often the interaction with the children is unmediated by parents or teachers. These advertisers elicit personal information from the children by getting them to fill out surveys before they can play and offering prizes such as T-shirts for filling in "lengthy profiles that ask for purchasing behavior, preferences and information on other family members."
- There are questions about the ability of children so young to understand advertising and its intent and not be deceived and manipulated by it. Experts say that children don't understand persuasive intent until they are eight or nine years old and that it is unethical to advertise to them before then.
- Older children pay less attention to advertisements and are more able to differentiate between the ads and TV programs but they are also easy prey for advertisers. Around puberty, in their early teens, children are forming their own identities and they are "highly vulnerable to pressure to conform to group standards and mores." At this age they feel insecure and want to feel that they belong to their peer group. Advertising manipulates them through their insecurities, seeking to define normality for them; influencing the way they "view and obtain appropriate models for the adult world;" and undermining "fundamental human values in the development of the identity of children."

Advertisements actively encourage them to seek happiness and esteem through consumption. (Sharon Beder, "Marketing to Children" in 'A *Community View*', *Caring for Children in the Media Age*, Papers from a national conference, edited John Squires and Tracy Newlands (eds), New College Institute for Values Research, Sydney, 1998).

The third process relates to what children are **not doing** when they are interacting with media technologies. Time spent interacting with machines is time that could be spent doing other activities that may be more beneficial or necessary for the development and well being of children. How media content impacts on children depends on developmental factors.

Obesity

Obesity is now one of the major public health problems for children with its lifetime risks of ongoing obesity and associated health risks of type 2 diabetes, cardiac disease). In Australia, over 25 percent of children can now be considered overweight or obese,

- Children aged 10 to 12 years old spend half the amount of time doing moderate physical activity they did when they were five to six and watch an "excessive" three hours of television a day, according to a study by Deakin University. Television viewing has been linked to increased risk of overweight and obesity (*Children Living in Active Neighbourhoods* project, Centre for Physical Activity and Nutrition Research, Deakin University)
- Many studies have shown a powerful link between time spent watching television and the likelihood of obesity although recent Australian data has cast some doubt on the strength of the relationship.
- Preschool children, particularly those from low-income families and those who have televisions in their own bedroom are more likely to be overweight. Families that watch TV during mealtimes have been shown to eat more junk food. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- Young children who don't eat regular meals and watch a lot of TV are more likely to be overweight. According to a US study of 8500 children. Family meals and TV watching are better predictors of obesity than the amount of exercise. (HG/Sun 18/4/08)
- Generally obesity results from an imbalance between calories eaten and calories expended through activity and exercise. Television (and electronic media behaviour) upsets this balance through:
 - Reduced metabolic rate when watching TV or engaged in other electronic media activities;
 - Reduced activity because of what they are not doing whilst they are interacting with the media. Children who watch more TV play less sport
 - Increased food and calorie consumption which may be influenced by advertising or result from "snacking" opportunities. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- AIFS research by Dr Jennifer Baxter which used 2500 diaries for 4 to 5 years olds found they spent more time watching TV (115 minutes) than exercising (65 minutes). On weekends it was 125 minutes compared to 99 minutes. (Herald Sun 11/7/08)
- A recent NSW study examined TV advertisements to children across five Australian capital cities, finding that a third of all advertisements during children's television viewing times were for food (on average eight advertisements, over three minutes of advertising). The most common food groups again were confectionery, 'fast food', soft drinks and snacks.
- A recent audit of children's advertising by the Australian Divisions of General Practice (ADGP) has found during children's television programs over the January holiday period 2003:
 - There were no 'healthy eating' messages provided to children during these times;
 - There was an average of one food advertisement per ad break, and in some cases up to three;
 - Over 99 percent of advertisements were for 'junk' food (high in fat, sugar and/or salt, and with little nutritional value); these included takeaway hamburgers/fries (30%), pizza (25%), soft drink (22%), fried chicken (7%), chocolate and confectionery (4%);
 - Across the summer holidays, assuming children watched 2½ hours per day, they would have seen more than 400 'junk' food advertisements, or almost 3½ hours. There were no major differences between commercial stations. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- Deakin Univ Centre for Physical Activity and Nutrition Research study of 800 children entitled *Children Living in Active Neighbourhoods* has found children 11 to 12 spend half the time doing moderate exercise than they did when they were 5-6 years. The survey found 40% of families had 2 TV sets with 32% of boys and 25% of girls aged 10 to 12 having a TV in their bedroom. Another

study by the centre found 20% of children ate their dinner in front of TV at least 4 times a week. (Age 12/12/07)

- Energy expenditure of adolescents 13–15 years when playing sedentary and new generation active computer games, Mean predicted energy expenditure was at least 65. kl/kg/min greater when playing the active Wii Sports game than playing three sedentary games. The energy used when playing active Wii Sports games was not of high enough intensity to contribute towards the recommended daily amount of exercise in children. (Lee Graves, Gareth Stratton, N D Ridgers, N T Cable Energy expenditure in adolescents playing new generation computer games. *in British Journal of Sports Medicine* 42, 2008)

Physical health and development

- There are some direct health consequences for children from their use of media technologies. For example, for children at risk of epilepsy, games that show flashing images against a bright background may induce epileptic seizures. Sleep problems have also been associated with TV viewing behaviour patterns. Sleep problems were more likely with greater daily viewing time, greater viewing before bedtime and having a television in the bedroom.
- Children using computers and electronic games may adopt the kinds of sustained and awkward postures that are associated with musculoskeletal disorders. The physical demands of extensive use may lead to a wide range of adverse effects on children's development, including visual, neurological and physical changes. ((Children and the media: Advocating for the future Royal Australasian College of Physicians (RACP),2004).
- Too much TV watching causes short-sightedness and disrupts hormonal balance and leads to increased risk of cancer and premature puberty. It also slows down the metabolism which is linked to increase in obesity and type 2 diabetes.(Aric Sigman, Biologist , Feb 2007)

Interactive impacts

The majority of Internet users are under 25 years of age. Youth society is undergoing significant and substantial changes as a result of new information and communication technologies. Emerging communication practices are multidimensional. Young people have access to many 'languages' of communication and multiple modes of delivering information. They frequently combine text, voice, graphics, video and gaming genres.

The ease of creating as well as communicating in cyberspace has led to changing patterns of participation. Adolescents are not simply participants in this environment but actively shape the nature of the environment itself. They establish communities and adapt technology to their needs. It was believed that the markets drove the actions of the adolescents, but increasingly it appears that the tweens (8-12 year olds) and adolescents (10-16 years old) are driving the market and the development and refinement of cyber communication devices.(Anne Bamford, Cyberbullying, AHISA Pastoral Care, National Conference, Melbourne, 2004)

Mobile phones

- Data from Roy Morgan's Young Australians Survey, which was conducted across Australia with 5,348 children aged between six and 13 over the period April 2005 to March 2006 shows that 23% of children aged six to 13 own a mobile phone. Older children are more likely to own a mobile phone than younger children, with 55% of 12 to 13 year old boys owning a phone and 65% of girls of the same age. Across age brackets, girls are slightly more likely to own a mobile phone than boys, which suggests differing attitudes to communication among girls and boys.
- Although mobile phones are marketed to parents on security grounds, the majority of children who own mobile phones are motivated by status and aesthetics in their purchasing decision. 53% of tweens (6 to 13 year olds) believe the brand of their phone is important and 62%believe that the way the phone looks is important.
- Similarly, children who own mobile phones exhibit signs of 'competitive consumption' as they try to keep up with their peers. 61% of child mobile phone owners want the latest technology and features and 54 per cent plan to upgrade their phone.
- As phones become more expensive and manufacturers and advertising encourage children to use their phones to download the latest ringtones, games and videos, the costs of mobile phones rise. Mobile phones cause financial distress for some teenagers but as manufacturers target the tween market younger children are increasingly likely to get into financial difficulty. Of children who own mobile phones, almost one in five say they spend too much on their mobile phones; and even
- more of their parents agree.

- Children who own mobile phones also exhibit signs of 'competitive consumption' where their consumption is motivated by a desire to keep up with their peers 61% child mobile phone owners agree with the statement 'having a mobile phone with the latest technology and features is important to me'. Similarly, 54% more than half plan to upgrade their phone and 41% of those who plan to upgrade hope to do so sometime in the next 12 months
- 59% of children's mobile phones are paid for by parents (59 per cent), while 34% of children pay for their phones themselves. The number of children funding their mobile phone increases with age.
- Children living in low-income households (below \$30,000) who are most likely to own a mobile phone followed by those living in households with an income of \$120,000 and over. child mobile phone ownership. (*Mobile phones and the consumer kids*, Christian Downie and Kate Glazebrook, Australia Institute Research Paper No. 41, 2007 citing Roy Morgan Research, 2006b.)
- A study by Dr Nina Weerakoddy from Deakin University entitled *The Good, the Bad and the WOTEvr* looks at mobile phone use by children. She found neediness on the part of children or parents can be encouraged by the use of mobile phones (*Herald Sun 27/6/07*)

Cyberbullying

Cyber technologies are used by adolescents to deliver information, communication and entertainment. Cyber-bullying is a growing phenomenon in virtual communication environments and there appears to be very little that the law, technology, schools or parents can do to stop it.

- Cyber-bullying is the general term describing any communication activity using cyber technology that could be considered harmful to individual or collective well-being. This paper focuses specifically on communication via mobile phones (including spoken word, text messaging, chat, picture and video messaging and phone WWW access) and Internet-based communication (including zines, chat rooms, discussion boards, newsgroups, email, web sites, home pages). Bullying includes predation, hate group recruitment, invasion of personal privacy, harassment, stalking, and harmful speech, inadvertent access of harmful material and dissemination of violent and abusive material. Increasingly, bullying involves forms of multimodal communication including sound, picture, animation and photographic sources. Cyber-bullying is most common in forms of virtual technology where the identity of the perpetrator can be hidden.
- A research study I have been conducting into cyber-bullying and identity of adolescents has found that cases of cyber-bullying are common in Australia. Adolescents as young as eight-years are describing cases of cyber-bullying, cyber-stalking and virtual teasing.
- Parents and teachers can often feel quite powerless in this environment. This feeling of hopelessness is exacerbated by the failure of laws and technology to effectively meet the challenge of cyberbullying. (Anne Bamford, Cyberbullying, AHISA Pastoral Care, National Conference, Melbourne, 2004)
- Kids help line said nearly half their bullying related calls can be attributed to cyber bullying (Age 11/7/08)

Sexual solicitation

- A US study completed in 2000 found that 19 percent of children and youth aged from 10 to 17 years who used the Internet regularly had been approached through the Internet (usually in chat rooms) for sexual contact. One in seven of these children reported that the offender had attempted to contact them by phone or post.
- Only 25% reported these attempts to parents, and around 10 percent of cases were reported to police, and ISP or other authority such as a teacher.
- Extrapolating from these figures, approximately 50,000 of Australian children aged 10 to 17 will be approached annually on the Internet for sexual purposes. In a small Australian survey, 27 percent of adolescent Internet users reported being contacted by a sexual predator whilst using chat rooms.
- Sexual offenders are more likely to target through the Internet children who are:
 - In the care of the state;
 - From single parent families;
 - Who have experienced previous maltreatment;
 - Who have emotional, learning or social difficulties, or low self esteem;
 - Who respond to offers of financial reward. (*Children and the media: Advocating for the future* Royal Australasian College of Physicians (RACP),2004).
- An explosion of teenage sex texting is alarming teachers, police and youth counsellors. The new mobile phone phenomenon, dubbed "sexting", led to 32 Victorian teenagers being charged with child pornography offences last year. Sexting involves taking or sending an explicit photo of oneself and forwarding it to friends or potential suitors. The full extent of sexting has not been quantified, but a

survey by a teenage girls' magazine found 40% of respondents had been asked to send sexual images of themselves. Detective Sergeant Campbell Davis, of the Victoria Police internet child exploitation team, said girls were especially targeted, and the third-generation of mobile phone technology, or 3G, which can send large image files straight to the internet, was exacerbating the problem. A survey by *Girlfriend* magazine found that four in 10 readers had been asked to forward a nude photo of themselves. (Age, Herald Sun 10/07/08)

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