

Media and Communications in Australian Families 2007

Review of Research Literature

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Executive summary

Aims of this review

This review of research literature is part of ACMA's Media and Society research project. The project as a whole aims to understand the long-term psychological effect of the media on children, families and society. The objective of the literature review component is to establish the current state of knowledge in the academic research literature about this and related topics. It also seeks to provide a frame of reference through which to interpret the findings of the community research component of the larger project, which investigates children and young people's consumption of media and associated community attitudes.

In order to guarantee currency, the review prioritises, but does not confine itself to, research published in the last 5–10 years. Sometimes the most seminal works date from an earlier period and have been included wherever they represent best currently available knowledge.

The review brings together a range of research from differing academic disciplines, together with studies conducted by media regulatory bodies. Important research contributions to the long-term influences of media on children and young people come from a variety of disciplines. Therefore this review covers research using diverse methodologies and theoretical approaches.

Investigating the psychological effects and influences on family and society requires moving beyond the academic discipline of psychology to a consideration of research traditions in communication and cultural studies, sociology, education, and public health. The communication and education literatures, in particular, identify both risk factors and opportunities associated with media use by children and young people.

Due to the historical, linguistic and geographic position of Australia's broadcasting environment, we include research from British, US and European traditions, together with studies from Australia and its region. Wherever possible, this review gives priority to Australian research.

Consistent with the scope of the Media and Society research project, the review concentrates on use of media in children's discretionary time and thus excludes use of media in school settings. The review prioritises media for which ACMA has primary regulatory jurisdiction. It also avoids sustained discussion of television advertising, which has recently been dealt with in a complementary review.¹

Organisation of the review

The review provides an overview of the theoretical and methodological issues which arise in researching media influences. It also discusses the place of media use in children's and families everyday lives. It examines research concerning several categories of mainstream electronic media: television; radio and music media; film, video and DVD; computer and video games; the internet and new media applications; and mobile phones. While the review is fundamentally organised by medium, certain aspects of the research, for example, public health and consumer socialisation, lend themselves to a discussion across media types.

Research findings

MEDIA IN THE CONTEXT OF CHILDREN'S AND FAMILIES' EVERYDAY LIVES

Research indicates that media play a central part in children's and families' everyday lives. However, when provided with other leisure options, children's first preference is often for non-media activities.

The literature suggests that media play a role in the timetabling of everyday life for both adults and children, and children's patterns of media and non-media leisure change over the course of their development. Younger children engage in more adult-directed activities (such as organised lessons, clubs and sports) in addition to media use. Adolescents generally develop more specialised and diverse media and leisure practices. They also engage in more unsupervised media use outside of the home. Screen entertainment use at home peaks at around 9–11 years of age.

Studies show that media are sometimes consumed collectively and sometimes individually. Media play a role in family time, in shared activities with friends, as well as being enjoyed privately. Parents are found to strive to achieve a balance of media and non-media activities in their children's daily lives. Parents also use access to media to negotiate their children's transition to greater emancipation as they grow up; for example, by providing a mobile phone or allowing a television in a child's bedroom.

TELEVISION

This review finds that television is still the most pervasive and influential media in the lives of children and adults.

In line with media research more generally, research on children and television has in recent decades acquired newer theoretical paradigms that have challenged the existing concentration on harms, and have placed a competing emphasis on the benefits associated with television viewing.

Research suggests that television content influences children's and adults' perceptions about what the world they live in is 'really like', including their perceptions of gender roles and social diversity.

There is consistent evidence that exposure to violent television programs is linked to short-term increases in aggressive thoughts or behaviour. However, the links to long-term violent behaviour and actual crime are weak.

Most psychological researchers find that viewing violence on television is a risk factor for aggressive behaviours and has the potential to impact on an individual's behaviour, psychological wellbeing and beliefs about the world. However, there is also broad agreement that there are likely to be various factors that contribute to these behaviours and beliefs, of which television is just one. Other factors are also likely to mediate any potential effects.

While children can be frightened by television content, findings of long-term negative effects are rare. There are developmental differences in what frightens children and what strategies are likely to help them cope with fears.

Studies have found that children and young people use television and other media as a means of accessing information about sexuality and sexual health in the context of their personal relationships and identity formation.

Researchers have argued that while television content can have influences, children are not just passive respondents. They are able to process media information and actively interpret and evaluate it.

Studies show only weak evidence that television displaces more cognitively valuable activities such as book reading or homework in the population as a whole. However, research also finds that background television viewing impacts negatively on success in homework tasks.

Research has found that children learn from television. Watching educational television in early childhood is associated with enhanced academic performance in later life. The same studies also show that viewing general entertainment television programs in the early preschool years is detrimental to the child's academic future.

Television viewing and 'talking about TV content' is an important part of social interaction and cultural literacy, particularly for older children.

RADIO AND MUSIC MEDIA

Studies indicate that screen-based media have not displaced radio, but children and adults are increasingly accessing music through new media platforms and services. There are important gender and cultural differences in music preferences and the amount of time devoted to music listening.

Researchers have argued that music media are a key source for the construction of adolescent identity, as well as a focus for social networking and an important facet of cultural production for young people.

Music lyrics have come under scrutiny for their sexual or offensive content. However, there is only weak evidence that the amount of sexual content in music videos or song lyrics causes initiation of sexual activity.

There are risks of prosecution associated with illegal file-sharing, but there has been a trend towards increasing promotion and uptake of legal distribution services.

FILM, VIDEO AND DVD

Research on film, video and DVD yields similar findings to television on topics such as 'reality-defining effects' and children's emotional responses to frightening content.

However, certain categories of content—notably pornography and sexually explicit material—that are not available on television are available to viewers of these media.

Researchers have examined access to pornography on film, video and DVD. While many have argued that such content harms children, by endorsing violent and degrading social attitudes to women, empirical evidence for harm to children from viewing sexually explicit or pornographic content is scarce, for ethical reasons.

Researchers argue that the evidence of a link between violent media entertainment and violence may vary in strength depending on the vulnerability of the audience. Risk factors for exposure to violent and sexually violent material include behavioural disorders, prior aggressive disposition and a prior history of family violence, or of violent or sexual offending. Conditions of viewing these media, such as the ability to watch scenes out of context, may pose increased risks for certain vulnerable groups.

GAMES

The available research suggests that games are played by all age groups and by both genders. However, there are social, developmental and gender differences in the amount and type of game-play incorporated into children's lives.

There is little evidence to suggest that games are an addictive or anti-social activity. On the contrary, they are used in highly social ways in peer contexts, particularly by teenage boys and young men.

As is the case for other screen media, findings suggest that while there is consistent evidence in the scientific literature to support claims for short-term effects on arousal, thoughts and emotions, there is little evidence for a substantial association between exposure to violent games and serious real-life violence or crime.

An 'accumulation-of-risk' model has been applied to an understanding of where game violence, as well as other media violence, fits into the learning and demonstration of aggressive behaviour. Risk factors suggested by researchers include individual psychological traits and paucity of social 'assets' (such as family, neighbourhood and community), while protective factors are enjoyed by 'asset-rich' children.

There is widespread agreement that use of games in educational settings improves student motivation and has great potential to enhance learning.

INTERNET AND NEW MEDIA APPLICATIONS

For ethical reasons, it is difficult for researchers to prove that harm results from children's exposure to pornography online. However, there is evidence of children's discomfort when they accidentally encounter sexually explicit content.

Researchers find that the highest risk factors suggesting long-term harms from exposure to online pornography are prior aggressive tendencies or behavioural disorders, or prior sexual or violent offending. It is generally agreed that sexually violent content poses a greater risk than non-violent sexual material. In addition, researchers argue that the more pervasive, accessible and private nature of internet content is potentially more harmful than that accessed through traditional media.

There is evidence of distressing peer-to-peer contact online, such as bullying or sexual harassment. The internet has facilitated practices such as the circulation of child pornography and created the possibility of 'online grooming' by paedophiles. However, data are not currently available to ascertain the proportion of sexual crimes against children that are directly attributable to internet use.

Children use the internet for communication, identity building, creative activities, and managing interpersonal relationships. It is also an important resource for formal and informal learning.

Media literacy is often discussed in considering solutions to the challenges faced by governments and parents in regulating internet content.

MOBILE PHONES

Research indicates that mobile phones have become a central artefact in the development of contemporary teen culture and most teenagers regard their phone as a key to their social life and an important element of their identity.

Parents' motivation in giving their children mobile phones is most often found to be security—the idea of perpetually being in contact with their children regardless of location or

time of day. However, communication without surveillance is an important reason for the popularity of mobile phones among teenagers.

In addition to talking on the phone to peers, children and teenagers initiate and maintain personal relationships with others using text messaging, which has also developed into a distinct linguistic form. Sometimes children and young people receive offensive or bullying messages on their mobile phones or are offered enticing but expensive services. However, the incidence of reported serious emotional or psychological harm associated with mobile phone use is low.

CONSUMER SOCIALISATION OF CHILDREN

‘Consumer socialisation’ refers to the concept of providing children with a group identity through consumption of brands. Researchers suggest that children’s developmental stages affect their ability to analyse persuasive intent in marketing discourse, while their social development plays a role in children’s identification with ‘brands’.

Products can be promoted to children and adults through internet games and viral marketing techniques. In addition, there are opportunities for indirect product marketing through the relationship between producers of children’s merchandise and the producers of children’s screen entertainment.

Certain advertisements and other media content have been criticised for promoting unrealistic body images and allegedly representing children in a sexualised manner, while other researchers argue that socialisation through consumption practices facilitates social life in modern cultures.

The primary risk factors associated with marketing to children identified by researchers are age, gender and socio-economic status.

INFLUENCES OF MEDIA ON CHILDREN'S HEALTH

It is evident from a wealth of literature that media content and use may influence the way young people perceive their environment, their bodies, their relationships, and various risk-taking behaviours. Media-consumption habits in young people are associated with numerous adverse health outcomes such as being overweight or obese, poor dietary intake, use of alcohol and tobacco, early sexual debut, eating disorders and body dissatisfaction, depressive symptomatology, and sleeping difficulties. Though these associations vary in strength, they are generally consistent across studies. One research study finds that reductions in food advertising have potential to benefit current obesity levels.

Conversely, media also has the potential to enhance young people’s health and behaviour. Media has the potential to promote physical activity through intensive mass media campaigns. Pro-recovery eating disorder websites may help young people with eating disorders, but much more research is needed into their effectiveness. Counter-marketing is effective in decreasing the initiation and prevalence of tobacco use. Media may also have the ability to help suicidal patients through increased ease of communication, counselling, and intervention.

More robust evidence is needed to investigate the effects of television on physical activity and sexual behaviour, and the influence of the internet on substance use, suicide and depression.

Risk and protective factors

An ‘accumulation-of-risk’ model has been proposed as a means of assessing whether media content and usage may impact negatively on children and families. Risk factors vary according to the media and context or usage practice being studied. However, factors which

are to be found across media contexts include heavy consumption of non-age-appropriate content, and paucity of socio-economic resources or family, community and educational 'assets'. Family and community assets may include provision of quality mediation (co-usage or critical discussion) of media content, usually by adults.

Additional risk factors for violent content influencing aggressive behaviour include gender, individual psychological traits and prior aggressive disposition or offending. The context within which users engage with violent or sexually-explicit material may constitute either a risk or a protective factor. Risk factors for harmful contact through electronic media and communications such as bullying, sexual harassment or abuse are harder to identify, due to a lack of reliable empirical data.

In addition to socio-economic status and parents' education level, risk factors for media consumption leading to educational disadvantage include heavy consumption of non-age-appropriate material, especially in the early preschool years. Children who are already experiencing difficulty in reading may be particularly at risk. The primary risk factor associated with product marketing is the age of the child, with preschool children and early primary school aged children being identified as particularly vulnerable due to their developmental 'stage'.

Protective factors include the educational and socio-economic resources of the family and community, family communication styles that facilitate critical discussion of media content and usage, and strong family or peer-group norms that discourage the potentially harmful behaviour or effect. Female gender is also a protective factor in relation to violent content. While media literacy is often proposed as a protective factor in dealing with a range of media content, this is a contested point among researchers.

¹ *Television Advertising to Children: A review of contemporary research on the influence of television advertising directed to children*, report to ACMA, 2007, www.acma.gov.au

1 Introduction

Media and Society research project

In the 2006–07 Budget, the Australian Communications and Media Authority (ACMA) was charged with the responsibility of delivering a review of the long-term psychological effect of the media on children, families and society.

ACMA commissioned its Media and Society research project to establish the current state of knowledge in the academic research literature about the long-term influences of electronic media on children, young people and families, together with a new national data collection to study media use in Australian families.

The empirical national community research component of the project examines Australian families' use of, and attitudes toward, electronic media (including new forms of 'converged' media devices, such as third generation (3G) mobile phones, iPods and Blackberries). Its focus is children and young people aged 8 to 17 years. By building on the 1995 study undertaken for the Australian Broadcasting Authority and published in a report entitled *Families and Electronic Entertainment (FEE)* (Cupitt, M. & Stockbridge, S. 1996), the project addresses issues of changes in attitudes toward media use and actual media use.

THE LITERATURE REVIEW

One objective of this review of research literature is to provide a context for interpretation of new data on use of, and attitudes toward, electronic media. The literature review is based on a survey of high quality research on benefits for and harms to children, families and society from media content and use. By reviewing the literature on benefits, as well as harms, the review of research literature aims to provide a balanced account of the long-term influences of media on children, and through them to society more broadly, than in previous reviews of media 'effects', which have tended to concentrate only on the harmful effects of media use.

In keeping with the FEE study (Cupitt, M. & Stockbridge, S. 1996), children's leisure and domestic practices are the focal point of the national community research component of the Media and Society project, and children's time and media use in school has not been studied. Consequently, this review of research literature excludes detailed consideration of the educational literature on children's media use.

This literature review aims to provide a comprehensive review of quality primary research literature from the last 5–10 years. Professional, high quality literature reviews of research findings, including research commissioned by Australian regulatory bodies, have been published during the last 5–10 years by practitioners of most of the research perspectives within the major academic disciplines, and these have also been examined as part of this review.

This review considers research conducted in Australia and internationally. US reviews frequently ignore studies of other media cultures, and the same is often true of European and UK reviews. The current review considers international research findings for relevance to an Australian context. Research specific to Australia's cultural context has been prioritised where this is available.

This review attempts to strategically target new studies. In some areas, seminal research published outside the delimited timeframe is brought to bear for the purposes of assessing changes in findings over time. Such a comparison is crucial in any evaluation of long-term

influences of media. Many new platforms and applications have emerged since 2000 for which research findings are less extensive. In these cases, literature studies concerning different but cognate media are sometimes compared.

Methods

The literature review was conducted between January and May 2007 by a multi-disciplinary team comprising media and cultural studies researchers, sociologists, psychologists, educationalists and medical researchers specialising in children's health.¹

The research team initially identified a wide range of literature, searching the electronic research sources of academic disciplines including media, communication and cultural studies, psychology, sociology, criminology, paediatrics and public health. It also identified policy-based research.

The team used the electronic resources and library catalog of the University of New England, including such indexes as ISI Web of Science, ProQuest, Expanded Academic, LexisNexis Legal, Informit, ABS Statistics, Emerald and JSTOR. Psychological and sociological abstracts were also searched. It also conducted an internet search, largely using Google Scholar. In addition, researchers at the Murdoch Children's Research Institute and the Centre for Community Child Health, Royal Children's Hospital, Melbourne, conducted a search of the medical literature using Psychinfo, Medline and Cinahl.

The materials identified were entered into an Endnote library (database) comprising around 1,100 items. The research team reviewed the sources obtained using the prioritising principles outlined in the previous section.

¹ The review as a whole was edited by Dr Leonie Rutherford and Professor Michael Bittman of the Centre for Applied Research in Social Science (CARSS) at the University of New England. Dr Rutherford is a Senior Lecturer in Communication Studies, with a special research interest in interdisciplinary childhood studies. Professor Bittman is a Professorial Research Fellow in Sociology. Chapter 2 was written by Dr Rutherford and Professor Bittman; Chapter 3 was written by Dr Rutherford; the discussion of the psychological literature on television and violence in Chapter 4 was written by Dr Megan Gilliver, under direction from Professor Brian Byrne of the Language and Cognition Research Centre, University of New England; parts of the section on 'reality defining effects' in Chapter 4 were contributed by Mr Martin Atkinson, a Research Assistant in the Centre for Applied Research in Social Science (CARSS), under direction from Dr Rutherford, who wrote the remainder of the chapter; Chapters 5–8 were written by Dr Rutherford, with contributions on the literature of criminology by Professor Kerry Carrington, Director of CARSS and Chair of Sociology at the University of New England, on the psychological literature on games by Dr Gilliver and Professor Byrne, on the educational literature on literacy and multiliteracies by Professor Len Unsworth of the Centre for Research in English and Multiliteracies Education (CREME) at the University of New England; Chapter 9 was written by Professor Bittman; Chapter 10 was written by Associate Professor Peter Corrigan (CARSS), Associate Professor of Sociology at the University of New England, with a specialist research interest in the sociology of consumer culture, and Dr Rutherford; Chapter 11 was written by Ms Megan Mathers, a Senior Research Assistant in the Murdoch Children's Research Institute (MCRI), University of Melbourne and Royal Children's Hospital Melbourne, and Associate Professor Melissa Wake. Professor Wake is a Consultant Paediatrician, Director of Research and Public Health at the Centre for Community Child Health (CCCH), at the Royal Children's Hospital. In this role, she leads a team of 50 researchers investigating the development and translation of community-based strategies that prevent or manage common childhood conditions, including obesity, language and literacy delay, and developmental and behavioural concerns.

2 Approaches to researching media influences

Approaches to researching media influences

The review of research literature was undertaken for ACMA by a multi-disciplinary team comprising media and cultural studies researchers, sociologists, psychologists, educationalists and medical researchers specialising in children's health. The team's aim was to consider carefully the theoretical perspectives and methodologies of all major disciplines, rather than dismissing any particular perspective, as is often the case in polarised traditions surrounding media 'effects', or as referred to here, 'influences'.¹

When reading research from other disciplinary frameworks, a rigorous and open-minded evaluation must take into account differing principles of what constitutes 'evidence' from one field to the next. It must assess whether failures of understanding as to the links between claims and evidence on the part of readers are responsible for undervaluing entire research traditions, or whether the methodologies of individual studies are themselves to blame for the lack of relevance of their claims.

This chapter begins with a brief outline of the main theoretical and methodological issues that arise in research on media influences. Many of these are common to discussions across media and recur in studies of types of content and user cohorts. These issues are rehearsed here to avoid unnecessary repetition of definitions and discussions of methodological strengths and weaknesses within individual chapters of the review. Where appropriate, specific methodological critiques of individual research studies are raised.

Theories informing research on influences

As Millwood Hargrave and Livingstone point out in their recent UK review of research (Millwood Hargrave, A. & Livingstone, S. 2006), there are many theories explaining the nature of media effects (Anderson, C., Gentile, D. & Buckley, K. 2007; Anderson, C. et al. 2003; Bryant, J. & Zillmann, D. 2002; Gerbner, G. 1990; McQuail, D. 2005). 'Theory' (as opposed to more 'practical' knowledge or skills) is often treated with suspicion in popular opinion. However, 'theory' simply refers to a body of 'beliefs, rules or principles, generally thought to be true' (Traudt, P. 2005). They are explanations about how things work, and, should allow researchers to predict outcomes with some degree of reliability.

MEDIA INFLUENCES: SHORT-TERM VERSUS LONG-TERM

Research literature on media influences can be divided into research focusing on short-term cognitive, emotional or behavioural influences on individuals and research focusing on long-term influences. These influences may be explained differentially as effects on individuals, social groups, families or society more broadly. In addition, psychological theories about child development, or about children's formation of attitudes and social identities, are developed in the research literature and inform explanations of media effects.

While these theoretical rationales are not all fleshed out, a few important points about different research trajectories are outlined.

Historically, ‘effects research’ has been the dominant tradition in the research literature concerning children and media, particularly in the United States. This paradigm posits a causal link between media ‘stimuli’ and media users’ responses. As Millwood Hargrave and Livingstone (2006) point out, most theories are not simply mechanistic. Rather they develop ‘models of psychological processes, combined with statistical, that is, probabilistic, testing of directional’ hypotheses derived from those models. While social influence is acknowledged to be bi-directional—that is, media exposure may lead to aggression—prior aggressive tendencies may also lead individuals to choose to expose themselves to more violent media content.

Media effects are generally identified through statistical comparisons (in experiments, between experimental and control groups; in surveys, between high and low exposure groups), a statistically significant finding meaning that the measured difference between the groups would not be expected by chance. The findings are thus probabilistic, and do not imply that each individual in the group is affected equally or even at all (Millwood Hargrave, A. & Livingstone, S. 2006).

Most empirical research is only able to measure short-term effects. Researchers, or their audience, typically infer that these short-term effects accumulate so as to result in long-term effects. The evidence from these studies usually tells us about measurements of influences over a relatively short period following media exposure. However, long-term effects are argued to occur by means of the repetition and reinforcement of the short-term effect, thus effecting an habitual change, in terms of their personality, to an individual’s emotions, cognitions, sense of self or customary behaviours (Anderson, C., Gentile, D. & Buckley, K. 2007; Anderson, C. et al. 2003; Browne, K. & Hamilton-Giachritsis, C. 2005).

MEDIATING VARIABLES: OTHER CAUSAL FACTORS

Although effects research looks at media exposure as a causal factor, it is generally recognised that other personal, familial and social factors are likely to contribute to influences on individuals and groups. The media thus represent only one causal factor in a larger picture of social influences. For example, advertising may impact on children’s food choices, but so too do parental lifestyles and family diet affect such choices. Multiple factors are likely to mutually influence each other, complicating the study of ‘indirect’ effects (Millwood Hargrave, A. & Livingstone, S. 2006).

DIRECT AND INDIRECT EFFECTS

The notion of ‘indirect’ effects recognises that the media represent one source of influence among others. Theory often seeks to explain the relations among these multiple influences. ‘Direct’ effects are said to occur when one or many factors independently influence attitudes or behaviour.

Indirect effects are said to occur when many factors interact, so that one factor influences another when working through one or more intervening variables. It may take several factors working together to bring about the effect.

RESEARCHING LONG-TERM EFFECTS

Studies of short-term effects are linked to arguments for long-term effects by various bodies of theory. These include the following:

- Theories of effects to individuals—for example, an early fear response that has long-term effects on anxiety or nightmares.
- Theories of long-term aggregate effects—such as supplied by ‘cultivation theory’ in which stereotypical gender or ethnic portrayals in media are said to contribute to prejudices among the large proportion of viewers/users.
- Theories of collective, or ‘reality defining effects’—these are similar to cultivation theory, but used by various approaches and disciplines, the concept of ‘reality defining effects’ refers to the power of the media, ‘through repetition of many similar messages’, to reinforce thoughts and emotions which ‘fit one version of social reality’. In the case of children, these influences are part of the socialisation process. Using the concept, researchers explore the possibility that media content shapes the ‘social construction of reality (irrespective of whether or not the content also reflects that reality)’ (citation from McQuail, D. 1994; Millwood Hargrave, A. & Livingstone, S. 2006).
- Media-society (McQuail, D. 2005) or ‘mainstreaming’ theories—for example, Marxist theory posits a direct link between economic ownership of media/culture institutions and the dissemination of ‘messages’ that prop up the class values of social elites; feminist ‘media-society’ theory similarly proposes that gender power relationships, articulated via media messages have the power to construct mainstreamed outlooks which legitimise existing gender regimes (Van Evra, J. 2004).

Most long-term media effects are explained as operating in conjunction with other factors, so that outcomes, for example, social behaviours and attitudes, are caused by multiple interacting factors and are much more likely to be indirect than are short-term effects demonstrated under controlled conditions.

Research methodologies: strengths and weaknesses

Most research on media influences is empirical in nature; that is, it makes use of observations about the physical or social world in a systematic way. The tools and processes used to collect data in any systematic inquiry are known as its research methodology. Methods commonly used in the study of media influences include content analyses, experiments, and surveys, together with a range of qualitative field methods. Most short-term effects are examined using experiments and most long-term effects are examined using surveys. Qualitative fieldwork is more often used to explore media users’ experiences, or to study how they make sense of, or negotiate meanings around, media texts.

TYPES OF RESEARCH METHODOLOGIES

Experiments

These may be conducted in laboratory settings under controlled conditions, or as field experiments conducted under controlled conditions as part of the subjects' everyday lives. They may also include naturally arising groups, retrospectively identified as experimental and control groups, for example, studies of cohorts of children before and after the arrival of television.

Surveys

These may include surveys of populations or groups selected to be relevant to the hypothesis being tested; large-scale polls involving brief questioning of a large national sample; data collected for other purposes which is reanalysed or brought to bear in relation to issues of concern to the study. In addition, large-scale surveys, 'particularly those that use representative sampling', that is, without bias that might skew the result, 'provide valuable information regarding the scale and distribution' of the phenomenon under study within the general population (Millwood Hargrave, A. & Livingstone, S. 2006).

Qualitative social fieldwork

Processes and tools employed may include: focus groups—group interviews and exchanges about issues of concern to the study; in depth interviews, for example, with game players about their media use; expert interviews, for example, with paediatricians or psychiatrists regarding their patients' experiences; close observation for example, of a child's behaviour around a games console or television; ethnography—in which the researcher spends large amounts of time following the everyday practices of media users in their home or school environments; and autoethnography—in which the researcher becomes a member of a community of practice, such as a multiplayer online universe, which they inhabit both as a user and as an observer.

Evaluating research studies

Experiments and surveys are said to be reliable if researchers are able accurately to replicate the results of the study and to have validity if the measure used is thought to be a good indicator of the effect the study is interested in (Neuman, W. 2006). For example, serious sleep disturbances are thought to be a valid a measure of a child's fright responses to a scary movie. Much of the polarisation over media effects concerns validity—some may question whether a child punching a toy after seeing a violent program depicting similar behaviour can be accepted as a valid measure or predictor of violent behaviour in ordinary everyday situations.

Internal validity refers to 'the extent to which the conclusions of an empirical investigation are true within the limits of the research methods and subjects or participants used. [...] External validity is the extent to which the conclusions of an empirical investigation remain true when different research methods and research participants or subjects are used' (Millwood Hargrave, A. & Livingstone, S. 2006). These measures of validity are applied to how far the findings from one study can be generalised to the population as a whole.

However, media effects research is more commonly questioned on the grounds of ecological validity. These are criticisms of how far conclusions of an empirical investigation can be generalised to naturally occurring situations in which the phenomenon under investigation occurs, as in the case in which aggressive play in a laboratory setting after viewing adult-chosen content is seen to apply to playground violence, or fighting in domestic settings.

Qualitative social research can also be evaluated on the grounds of validity, quality and representativeness, together with other criteria, such as the influence exerted by the presence of the researcher, depth of study, amount of observation time in an ethnographic study, appropriateness of ‘virtual’ ethnographic methodologies to ‘real world’ populations, and so on (Neuman, W. 2006). However, there are fewer generally-agreed criteria on which qualitative research should be evaluated.

EVALUATING EXPERIMENTS

Experiments can ‘test causal claims or hypotheses, because they ensure (a) random allocation of participants to experimental and control groups (so as to control for potentially confounding factors or “third causes”) and (b) temporal ordering by which media exposure precedes measurement of outcomes or effects’ (Livingstone, 1996; Perse, 2001; Schroder et al., 2003; cited in Millwood Hargrave and Livingstone, 2006). They constitute the only research method by which cause and effect can be demonstrated.

However, they may be ‘unnatural’ and not represent the experience of viewers or users and their selection of or access to media. Nor may the experimental consumption of media resemble anything like everyday life. In addition, the measurement of effect often involves a simulation of feelings or behaviours, such as aggression, whose relation to the real-life behaviours may seem tenuous.

EVALUATING SURVEYS

The strength of surveys, particularly large-scale projects with representative sampling, is their ability to provide information about the scale and distribution of the variables within the population as a whole. Results can be compared with many other demographic and social variables. Surveys can also guarantee anonymity when responding to potentially embarrassing questions, such as matters concerning access to sexual or violent content.

However, surveys cannot demonstrate cause and effect—this particularly applies to cross-sectional surveys². Typically, surveys deal with correlations, that is, the association between two variables, such as the level of education and the amount of television viewed.

Establishing these associations is a valuable activity in social research. The analysis of ‘risk’ factors is generally based on this kind of knowledge and has an important application in preventative health and social policy. There are many analytic techniques devised to test whether the association between two factors is merely a result of a third factor, allowing researchers to estimate the influence of one factor when all other measured factors are held constant.

Longitudinal surveys offer important information towards establishing causal pathways, because they allow the study of antecedent conditions and their subsequent effects in the same individuals over time, while controlling for many potentially confounding differences among people.

Other methodological problems with surveys may include: finding a control group to test effects of media exposure, especially with all-pervasive media like television; lack of agreed units of measurement for social processes or behaviour; heavy reliance on self-reporting measures, that is, 'effects' are not objectively measured in some cases, but are assumed from respondents' own estimation about whether they have been affected.

The 'third person effect' (Davison, W. 1983) is an acknowledged limitation when assessing self-report data, that is, people typically deny that they are themselves influenced by the media, while maintaining that others, younger or less canny individuals, are influenced. The 'third person effect' is common to qualitative fieldwork—interviews and focus groups—as well as surveys (Neuman, W. 2006).

EVALUATING QUALITATIVE FIELDWORK

These methods are more common in Australia, the UK and Europe than in the US, with its strong, quantitative social science tradition. In Australia, in particular, qualitative research about media is often conducted by regulatory bodies whose concern is to understand community attitudes to and concerns about media content and its distribution contexts, and how these relate to community standards and family values and routines.

Qualitative methods have the advantage of being able to take into account subjects' diverse and multi-faceted responses to media. In particular, they can identify contexts and personal issues that mediate effects. In addition, 'the flexibility of the method permits the researcher to follow up specific or fruitful lines of inquiry within the interview/observation/discussion format itself, this resulting in a more thorough and careful analysis' (Millwood Hargrave, A. & Livingstone, S. 2006).

However, the social influence of the researcher's presence affects the data collected, that is, respondents may be likely to respond as they perceive the interviewer/observer would wish them to. More importantly, qualitative research is unable to demonstrate either causal relationships or correlations. Nor are qualitative methods able to say anything about how widely a phenomenon may be distributed within a sub-group or the population as a whole. On the other hand, they can provide a depth of interpretation impossible to obtain through other, less subtle, methods.

As is the case with surveys, qualitative research relies to a large degree on self-report, or self-representation. Social desirability is acknowledged to affect the reliability of data collected, as is the case when parents over-report the amount of supervision or rule-making in regard to their children's media use.

Culturalist approaches

In addition to more empirical media and communication studies perspectives—perspectives that do acknowledge the concept of ‘effects’ such as the medical, public health and social science research traditions—there are cultural studies perspectives.

RECEPTION THEORY

The predominant methodologies of social science are underwritten by beliefs that media transmit messages to audiences, which can cause effects—this is referred to in mass communication theory as a transmission model (McQuail, D. 2005). In reception theory, on the other hand, media messages are seen always to carry multiple potential meanings, which are interpreted according to the culture and context of receivers. Stuart Hall’s seminal article ‘The television discourse—encoding and decoding’ (Hall, S. 1993 [1974]) is an influential pioneer in this tradition. The television program is seen as a meaningful discourse that is encoded according to the meaning structure of mass media institutions and the social elites they support, but are decoded according to the differential cultural and knowledge frameworks of different audiences and individual users. What this means is that readers can read between lines, or read against the grain of the ideological messages encoded. Thus communication theories such as ‘cultivation’, which assume more predictable effects from television content, are called into question.

CULTURAL STUDIES

The culturalist approach has its origins in humanities disciplines, such as literature, linguistics and philosophy, and ‘takes in all aspects of the production, forms and receptions of texts ... and the discourses that surround them (McQuail, D. 2005). It is concerned with the content of media texts, but also with the varied, differential, context of production and reception of texts, together with the social practices that surround them. Users of media become important, as does how they produce meaning from media texts.

Cultural studies research values popular culture as highly as more elite culture, arguing that ‘cultural capital’ (Bourdieu, P. 1986) may not be bound to wealth or education (economic capital). While many individuals may be subjected, in traditional economic terms, they have, nevertheless, ‘semiotic power’ in the cultural economy—that is the power to shape meanings to their own uses and pleasures (Fiske, J. 1987; McQuail, D. 2005).

Cultural studies approaches take as their primary methodologies textual and discourse analysis. For researchers in this tradition, ‘texts’ can be social and political phenomena or processes (social practices), as well as artefacts. A ‘text’ is anything that can be ‘read’ (interpreted) to produce meaning (Thwaites, T., Davis, L. & Mules, W. 1994). Therefore, the Sony Walkman (Du Gay, P. et al. 1997) a bus ticket, a political rally, can be seen as a ‘text’ and subject to analysis. While other, more ‘empirical’ disciplines, such as sociology, have been influenced by cultural studies theory, these disciplines have retained their emphasis on fieldwork and qualitative social research. Cultural studies research does not insist on methodologies that are able to establish representativeness of data, causal connections, or associations.

One of the long-standing assumptions of cultural studies has been that powerful elites are able to exert influence on the circulation of social meanings, within the culture, at the ‘macro’ level, rather than the ‘micro’ level of effects on individual media users. Cultural studies are often antithetical to research about media influences, considering that social science traditions may be, unintentionally, in league with powerful elites, to censure and censor the pleasures of less powerful groups, such as ‘working class’ adults or children (Buckingham, D. 2000; Buckingham, D. et al. 1999; Davies, H., Buckingham, D. & Kelley, P. 2000; Jenkins, H. 2006c).

The strengths of this varied cluster of research approaches are its concentration on the active interpretative power of audiences, in receiving and interpreting media texts, and in producing meaning from media content and media literacy practices, not merely being passive receivers of ‘messages’.

¹ ACMA’s understanding of the term ‘influences’ includes ‘effects’, but goes beyond it in a way that acknowledges more complex causal and other relationships.

² A cross-sectional study is a class of study that provides a ‘snapshot’ of the frequency and characteristics of an observed phenomenon a population at a particular point in time. The recorded data can be used to assess the relative frequency of the phenomenon in a population. It is a method widely used in medical research. However, it is recognised that associations yielded by cross-sectional studies must be treated with caution, because of possible bias in the selection. In addition, since variables are measured at the same point in time, it may not always be possible to distinguish cause and effect; for example, if ulcers and milk drinking are found together in a population, is this because milk causes ulcers or because ulcer sufferers drink milk to relieve their symptoms?

3 Media in the context of children's and families' everyday lives

Media, leisure and 'lifestyles'

A project framed as 'Media and Society' provides an opportunity to provide a context for understanding media and children within social structures more broadly. Research on children and media has often been criticised as 'media-centric', having a tendency to attribute all the ills associated with young people and social change to the influences of problematic media use. A major trajectory of much historical and social scientific research, on the other hand, has been to understand media use in the context of changes in the social conditions of childhood and family life (see also Livingstone, S. 2002; Morley, D. 1988; Silverstone, R. 1993, 1994; Silverstone, R. & Haddon, L. 1996; Silverstone, R., Hirsch, E. & Morley, D. 1992).

These changes are studied as specific to particular times and cultural locations. Sociologists of childhood (Corsaro, W. 2004), sociologists of technology (Mackay, H. & Ivey, D. 2004), and social psychologists (Livingstone, S. 2002, 2003a) have looked at how media technologies are diffused through societies, then appropriated for specific social needs, and finally 'domesticated', becoming so embedded in the routines and everyday practices of children and families that their removal would affect the way in which social life is experienced and the organisation of time within the family is structured. As Sonia Livingstone comments 'the emphasis on environment, or context, is central':

Most simply, media and leisure activities are made meaningful by their mutual relations with all others: watching television means something different for the child with nothing else to do compared with the child who has a PC at home or friends knocking on the door. Thus conditions of access and choice within the child's environment are central to an understanding of the meanings of media use ... Moreover, without thorough contextualisation in the everyday lives of children and young people, media research tends to lose sight of the bigger picture, tending to transform the positives and negatives of people's lives into images of positive and negative children or young people, particularly negative ones (Livingstone, S. 2002).

This chapter gives an overview of the major topics in the research literature concerning the influence of media use on children's and families' everyday lives, primarily in the UK, European, US and Australian contexts.

SOME PRELIMINARY DEFINITIONS

The Media and Society project uses the term 'mainstream electronic media' to discuss what in various other literatures are called 'ICTs' (information and communication technologies), 'media', 'entertainment media', and so on. The difficulty in finding a general term reflects the range of social purposes for which communication, information and entertainment technologies are employed by 'users' and the social contexts in which they are used. Thus, even in the research literature itself, the context of any given technology or application is more important than its design or mechanical features.

The term ‘children’ is also problematic as a general term, as is witnessed by the awkward construction ‘children and young people’ used by researchers when discussing media use by people from 0–18 years of age, and often up to 25. Australia’s Children’s Television Standards define children as Australians up to the age of 14 years, and the Media and Society national community research examines people from 8–17 years of age. This review looks at the research literature covering people from 0–18 years of age. Terms such as ‘children’, ‘young people’, ‘youth’, ‘teens’ and ‘adolescents’ are found when discussing different social, cultural and developmental issues within the research surveyed.

Finally, research that examines the everyday lives of children and families may have either a ‘child-centric’ or an ‘adult-centric’ approach to knowledge and evidence (James, A., Jenks, C. & Prout, A. 1998; James, A. & Prout, A. 1997; Qvortrup, J. 1994). Much European and Australian qualitative research is of the former kind—considering that children’s lives in the here and now, as they experience and talk about it, is worthy of serious consideration.

Other research is based on paradigms that see the child as what one UK researcher described as a ‘deficit system’ (Buckingham, D. 2000) and childhood itself as a point of transition to an adulthood placed in social and civic systems of responsibility. Therefore, the kinds of questions researchers seek to ask is often based on competing understandings of what it means to be a child, a member of a family or a member of society, and the results researchers find must be interpreted accordingly.

Media and leisure

While children in the major industrialised countries have been found to spend several hours per day with media, researchers have argued that this amount of media use, while undoubtedly revealing individual preferences, is also constrained and structured by the availability of leisure options. Surveying the alternatives, studies have pointed to the fact that it is adult provision (or lack thereof) of time, space and resources for children’s leisure which make media use the most viable choice for young people.

Children’s first choice is often ‘going out’, ‘sport’ or ‘visiting friends’—time spent away from home and family in non-media pursuits. Children’s conceptions of ideal leisure were found to centre on, as first preference, going out, an activity ‘offering individuality, sociability and opportunities for exploration, with exciting potential for the unexpected’ (Livingstone, S. 2002); and secondly, enjoyment of specialised and private (or at least non-interrupted) use of chosen media in public domestic spaces or ‘the media rich bedroom’ (Bloustien, G. 2003; Haddon, L. 2004; Holloway, D. 2004; Livingstone, S. 2002; Livingstone, S. & Bovill, M. 2001).

Family routines

The *Young People and New Media* study, a major UK research project using a combination of quantitative and qualitative research methods, found that media play a role in the timetabling of everyday life for both adults and children. Media influenced the relationship between going out for work, school or organised leisure activities, and staying home (Livingstone, S. 2002; Livingstone, S. & Bovill, M. 1999b).

Families were found to engage in routines out of work and school hours, much of it outside the home, with highly social, adult-organised activities, designed to be improving or productive in some way, for example, music lessons or sport. These activities required considerable investment on the part of parents, both in money and time, but were perceived as investments in their child's future. Variables such as age and gender of child, together with the socio-economic demographic of the family, were found to influence how much resources families are willing or able to put into such activities (Livingstone, S. 2002; Livingstone, S. & Bovill, M. 1999b).

Time spent with media, on the other hand, was often seen by both parents and children as 'fill-in time'. For children, therefore, it was found to represent freedom from adult-imposed imperatives, providing time for children to 'hang out' in an informal and relaxing way (Livingstone, S. 2002). Smaller scale, but more in-depth ethnographic studies of family media use have also documented the use of media in domestic routines (Facer, K. et al. 2003; Holloway, D. 2003, 2004; Mackay, H. & Ivey, D. 2004).

Social developmental patterns in children's leisure

Livingstone and Bovill (1999b; Livingstone, S. 2002) identified patterns of children's media and non-media leisure. Different leisure patterns recur at different ages across families in the sample. Livingstone (2002) describes these recurring patterns as a 'social developmental account of children's leisure':

- Activity focus (early–middle childhood, 6–8 years)—children are engaged in a diversity of play activities at home, resulting in low media use, combined with relatively formal organised activities outside the home, such as clubs and sports. These activities can be expensive in time and resources, which is reflected in their differential take-up by children of middle-class and working-class families.¹
- Structured entertainment (late childhood, approximately 9–11 years)—leisure is organised around screen entertainment at home and formal participation in clubs, both being structured and scheduled for the child by others. This period sees the peak in screen entertainment use at home (particularly television) as well as the peak of participation in sports clubs, with a corresponding decline in non-media hobbies and playing at home.
- Media-rich casual leisure (early–middle teens, 12–14 years)—homework becomes more important during this period, alongside a personalised, media-rich environment at home that is commercialised in that it is expensive to provide, but also because this media-centred leisure involves content choices influenced by 'fandom' for entertainment and sports celebrity culture.
- Diversification and specialisation (late teens onwards, 15–17 years)—the use of media at home remains high, though diversification of media choices make it harder to categorise this age-group as a whole. UK trends reported in this study suggest that television use remains high, with music and internet use gaining ground. At the same time, computer gaming and reading books for pleasure declines for many. While participation in sporting clubs or extra-curricular activities organised specifically for young people decreases, going out with peers increases, especially involving commercialised leisure practices (on teen leisure, see also Beavis, C. 2005; Bloustien, G. 2003; Ling, R. & Yttri, B. 2006; Mazzarella, S. 2005).

Children as specialists: styles of media use

Livingstone and Bovill (1999b; Livingstone, S. 2002) also reported trends towards differential ‘media lifestyles’—specialised patterns of use, and different mixes of media—among children and young people. In these patterns of media and non-media leisure activities they pursue themes or interests that become constitutive of their identities (Livingstone, S. 2002). These findings are consistent with other research on use of media in identity creation and social networking (Beavis, C. 2005; Huffaker, D. & Calvert, S. 2005; Ito, M. & Okabe, D. 2006; Jenkins, H. 1992, 2006b; Mazzarella, S. 2005; Thomas, A. 2000; Turkle, S. 1995).

Livingstone and Bovill (1999b; Livingstone, S. 2002) identified the following ‘styles’ among UK children:

- Traditionalist—users who spend most of their time with ‘older’ media, such as television, books and magazines, and little on newer entertainment media, such as games. Statistically they were more likely to be girls, with no differentiation by social grade.
- Low media users—while there were no strong correlations with either gender or social grade, they were likely to be the children of relatively more educated parents. Even with this group, TV viewing is an important activity.
- Screen entertainment fans—these children are above average users of TV, videos and games, and spend very little time with books. They are more likely to be working class boys, aged 12 to 14 years,² and have sport as their major outdoor activity of choice. These children are highly social, sharing interests in common with both friends and family.
- Specialists—those children who spend more than average amounts of time with one particular medium. They may be book lovers, PC fans or music lovers.

These media ‘menus’ become more specialised as children grow older, with use of computer-based media increasing with age (see also Foehr, U. 2006; Roberts, D., Foehr, U. & Rideout, V. 2005).

‘Bedroom culture’ versus ‘street culture’

One of the themes identified by researchers has been the historical shift in children’s social activities in more affluent nations from unsupervised public spaces to supervised domestic spaces. While children of previous generations may have had greater opportunity to play in the streets with peers and friends, contemporary social factors have contributed to a shift in children’s social activities from the setting of the streets to that of the home. Factors noted by researchers include: the perceived fear of crime; the scarcity of alternative, safe public leisure facilities; more harried family schedules due to changes in families’ hours of work (Haddon, L. 2004; Ling, R. & Haddon, L. 2003; Livingstone, S. 2002; Livingstone, S. 2006a).

Consequently, the rise of what studies refer to as the ‘media rich home’ and ‘bedroom culture’ mean that children and young people spend more time entertaining friends in conditions that alter the way media is accessed. A greater degree of privacy for children goes hand in hand with less supervision of media use and mediation of media content (Haddon, L. 2004; Livingstone, S. 2002, 2006a).

Children's balance of media and non-media activities

British and Australian studies in the 1990s found that parents were not overly concerned about the kind of content their children accessed on television. Parental concerns centred on the overall balance of their activities in their lives, both media and non-media (Cupitt, M. & Stockbridge, S. 1996; Livingstone, S. & Bovill, M. 1999b). Parents reported that their regulation of the time their children spent with media (watching screen-based entertainment, gaming or going online) was motivated by a desire that children avoid addiction to one particular activity to the neglect of others, such as playing sport or enjoying social activities with friends (Haddon, L. 1999).

While content regulation, especially for younger children, remained a topic on the public agenda, in private it was less of a concern. European studies of children and screen-based entertainment found that time spent with media is more of a concern where it is felt to distract children from more important activities, such as sleep, or school work (Pasquier, D. 2001). Time spent on gaming and the internet also evince parental concern, where it is seen to exclude other activities, including time spent with the family, or helping with household chores (Holloway, D. 2004; Lenhart, A., Rainie, L. & Lewis, O. 2001; Livingstone, S. 2002).

Parental ability to monitor and regulate children's media use

The rise of home-based play, especially for younger children, may seem to have increased opportunities for parents to supervise their children's access of media. However, the rise of 'bedroom culture' has been said to make such supervision more problematic. Researchers have argued that new technologies have given rise to new patterns of use and competency with information and communication technologies on the part of children and young people. This has made it harder for parents to draw on their own experience when making rules for usage.

While previous Australian research found that parents felt confident in their technological ability to supervise children's computer and internet use (Cupitt, M. & Stockbridge, S. 1996), more recent studies have reported that new technological skills, such as using instant messaging and chat, window minimising, use of screen names, multiple web-based email addresses, SMS and the calling-number display features of mobile phones are actively used by young people to avoid parental surveillance and maintain the privacy of peer relationships and personal communication (Ito, M. & Okabe, D. 2006; Ling, R. 2004; Livingstone, S. 2006a).

Emancipation of young people through personalised media use

Another topic to arise in recent research is the role ICTs play in the development of children's independence and identity formation. A transition to private or semi-autonomous access to media has been found to mark rites of passage, by which parents facilitate children's gradual transition to independence. The 'media rich bedroom' allowing children's private ownership of media, as noted previously, is a factor, though age, gender and socio-economic status are predictive factors: boys and children from middle-class families being more likely to command such resources (Ling, R. & Thrane, K. 2001; Livingstone, S. 2002; Roberts, D., Foehr, U. & Rideout, V. 2005). An in-depth ethnographic study of a small number of Western Australian households also found that the politics of the family and hierarchies of age and gender influenced the 'geographical' placement of media goods in individual bedrooms or

other spaces, for example, a daughter in the household being moved out of her bedroom into a smaller sleepout to accommodate a home office for her father (Holloway, D. 2004).

Studies also found that some parents consciously negotiated their children's independence with ICT use, allowing semi-autonomous internet use for private communication, acknowledging their need for a separate space for social engagement with peers, even if only an electronic one (Haddon, L. 2004; Livingstone, S. 2002; Livingstone, S. 2006a; Nafus, D. & Tracey, K. 2002).

Provision of mobile phones is another way families negotiate this process of emancipation (Ling, R. & Helmersen, P. 2000). Norwegian studies found that mobile phone ownership is perceived as a significant marker of adult status, indicating a transition to a state in which parents trust teens to manage their own finances and social interactions with peers. Although mobile phone purchases have now begun to include pre-teen children, these studies indicated that parents were more able to justify such expenditure on adolescents, on the grounds that it promoted age-appropriate, independent development of teens' social sphere (Haddon, L. 2004; Ling, R. & Helmersen, P. 2000). Studies also report that European parents use mobile phone management as a means of teaching adolescents the 'adult' skill of responsibility for their own finances. As a corollary to this, ability to pay for their own mobile phone use was seen as a symbolic marker of adulthood in late teen peer culture (Ling, R. 2004).

Family relationships: togetherness versus individualism

Studies have generally found that use of information, communication and entertainment media does not result in children's social isolation, nor does it necessarily displace sharing of social interaction within families. One UK project found that families comprised of 'screen entertainment fans' tended to spend considerable time viewing together (Livingstone, S. 2002; Livingstone, S. & Bovill, M. 1999b), while a number of studies have documented the way in which 'multitasking' results in traditional media like TV and radio forming wallpaper to accompany other family activities (Medrich, E. 1979; Rideout, V. & Hamel, E. 2006; Roberts, D., Foehr, U. & Rideout, V. 2005). Central location of certain entertainment technologies, such as subscription TV services, is also a factor in ensuring that media time is also family time in connected households (Holloway, D. 2003; Mackay, H. & Ivey, D. 2004).

Other researchers have examined the way in which proliferation of communication and entertainment media in private locations in the home has made it possible for family members to 'live together separately' thus avoiding conflicts over content and media lifestyle choices (Haddon, L. 2004; Livingstone, S. 2002). Qualitative research has shown that both adults and children value this freedom of choice of what to view, although other resource considerations, such as comfort of the viewing room, closeness to the kitchen and the hub of the family, access to central heating or a better screen, still make the geographical location of media usage within the home a point of negotiation for family members (Haddon, L. 2004; Holloway, D. 2003, 2004; Livingstone, S. 2002).

Media can also offer children new means for social interaction. Studies have detailed the way in which consumption of media facilitates peer interaction, such as visiting friends to play a new game, or calling or texting friends to coordinated peer activities outside the home (Haddon, L. 2004; Ling, R. 2004; Ling, R. & Haddon, L. 2003). Both the internet and telephone are useful for 'kin-keeping' in families separated by distance or divorce. Studies have found that mobile phones are frequently purchased for children by non-custodial parents to facilitate management of social relationships (Livingstone, S. 2002).

Ethnographic studies and other qualitative social research has examined the interaction levels of families, detailing the ways in which media have become part of the symbolic resource base that connects them (Alexander, A. 1994; Bryce, J. 1987; Goodman, I. 1983; Livingstone, S. 2002; Livingstone, S. & Bovill, M. 2001; Lull, J. 1990; Pasquier, D. 2001). Computer-based media may be less significant for child–parent relations, in the sense of doing things together, than more traditional media. TV viewing is most frequently shared, but books and music are also commonly shared media in domestic routines.

Media may:

- provide a common leisure activity, which may either stimulate conversation, or provide a less contentious cooperative activity for family members who might be conflicted
- provide symbolic resources for family narratives, ranging from simple topics of conversation to more complex negotiations of expectations
- mediate reception, such as parents providing context and commentary on media contents and guide social learning from media
- regulate family time and space
- mediate family subsystems—depending on such factors as power relationships in the family, media may serve as babysitter, time manager, stress reducer, companion or boundary marker (Livingstone, S. 2002).

Displacement of other activities

Studies in displacement have looked at media’s role in the balance of alternative activities available within children’s time budgets. Displacement studies typically examine whether media use replaces activities such as academic work, other social and leisure activities, including less sedentary play, but also the way in which newer media change patterns in use of older media.

Empirical research has found that use of media does not displace homework (Livingstone, S. 2002; Roberts, D., Foehr, U. & Rideout, V. 2005). More surprisingly, given popular anxiety on the part of parents and educators, research replicated over many years and national contexts shows that the leisure reading of books by children demonstrates one of the fewest clear displacement effects. This finding is in the context of national populations, rather than individual cases. However, the time-use statistics also indicate that populations of children have never read books for pleasure to any great extent—an average of only 15 minutes per day has been found in studies from the 1950s onwards (Himmelweit, H., Oppenheim, A. & Vince, P. 1958; Livingstone, S. 2002; Schramm, W., Lyle, J. & Parker, E. 1961).

Studies have examined the way in which usage of newer media displaces those media platforms and genres that deliver similar content, or are used for similar purposes. For example, movies and television displace the reading of comics as ‘entertainment fiction’, but do not impact to the same extent on the reading of literature. Viewing TV drama displaced listening to radio plays and serials; radio then ‘specialised’ to become primarily a music medium. Similarly, telephony and email has displaced the writing of letters for the purposes of communication (Livingstone, S. 2002).

Other studies suggest that media-centred play may have displaced more active playing in children's time budgets, as a corollary to the replacement of street culture with bedroom culture as a social location (Livingstone, S. 2002). Intervention experiments have been undertaken to test the hypothesis that media use constitutes a risk factor for sedentary lifestyles.

Researchers engaged the cooperation of pre-teen children and their parents in the challenge of a 'media-free week' as part of a media education program. Analysis of the results found that media time during the week was most commonly replaced by active playing outdoors, often in the company of parents (Kline, S. 2005). The researchers chose pre-teen children, on the basis of previous findings that this age-group is the one for which parents are willing to expend more time and more money than for other older-aged children (Kline, S. 2005). The displacement effect produced depended on investment of their own leisure time on the part of adults, who provided companionship, support and safe supervision in public spaces. Thus, the temporary lifestyle changes reported in the study involved alteration to family routines as well as children's routines. In the long-term, such investment is costly for families, who may face increasing time pressure due to work or other commitments (Bittman, M. 1998; Bittman, M. & Wajcman, J. 2000).

Summary

Research indicates that media play a central part in children's and families' everyday lives. However, when provided with other leisure options, children's first preference is often for non-media activities.

The literature suggests that media play a role in the timetabling of everyday life for both adults and children, and children's patterns of media and non-media leisure change over the course of their development. Younger children engage in more adult-directed activities (such as organised lessons, clubs and sports) in addition to media use. Adolescents generally develop more specialised and diverse media and leisure practices. They also engage in more unsupervised media use outside of the home. Screen entertainment use at home peaks at around 9–11 years of age.

Studies show that media are sometimes consumed collectively and sometimes individually. Media play a role in family time, in shared activities with friends, as well as being enjoyed privately. Parents are found to strive to achieve a balance of media and non-media activities in their children's daily lives. Parents also use access to media to negotiate their children's transition to greater emancipation as they grow up, for example, by providing a mobile phone or allowing a television in a child's bedroom.

¹ More recent research, using the marketing concept of the 'tween', supports the findings that parents invest more income and time in pre-teen children than older children, consistent with Livingstone's social developmental account (Dotson, M. & Hyatt, E. 2005; Kline, S. 2005; Willett, R. 2005).

² The *Generation M* survey in the US context also linked cultural factors to entertainment 'styles' and content preferences (Roberts, D., Foehr, U. & Rideout, V. 2005).

4 Television

In his foreword to a recent review of fifty years of US research on children and television (Pecora, N., Murray, J. & Wartella, E. 2007), Lloyd Morrisett of the *Children's Television Workshop* listed what he describes as 'inescapable conclusions' arising from this large body of research:

- Most children watch a great deal of television. They spend more time watching television than any other discretionary activity.
- Many children begin watching television at a very early age, often less than 12 months.
- At whatever age they begin watching television, children learn from it.
- Both the amount of time children spend watching television and what they watch affect learning and behavior in important ways.
- If children watch programs that have significant violent content, they are likely to show increases in aggressive behavior both immediately and as much as 10 years later.
- Television often reinforces social stereotypes of gender, race, ethnicity, age, and disability.

The 50-year review by Pecora et al. is consciously retrospective, summing up a mass communication era its authors fear might be coming to an end, and it is shaped by the US academic and cultural context.¹ However, while this review does not necessarily accept Morrisett's 'conclusions' in an unqualified manner, they do outline key concerns that have shaped TV research since its inception. These concerns include early influences on child development, the time spent with TV to the exclusion of other activities sometimes deemed more worthy, the potential of TV as an educational media and anxieties that social learning may include antisocial attitudes and behaviours, and, more particularly, supply scripts for aggression and precocious or unsafe sexual activity.

In this chapter, the changing context of television viewing in the household is considered briefly. Research is then examined from the 'constructivist', or 'active audience' tradition, including seminal Australian research. Literature on the following topics is also reviewed: 'reality-defining effects', for example, the ways in which television may influence attitudes and behaviour; children's emotional responses to television content, particular fright response; psychological studies on television violence and behaviour; and the educational benefits (and risks) of television viewing.

Styles and contexts of viewing

TV is used in many different locations and in different 'styles' of viewing practice, and these uses vary across cultural contexts. TV viewing may be mundane—a backdrop to doing nothing—or it may be exciting, where the user gives a favourite program engaged and sustained attention (Livingstone, S. 2002; Mackay, H. & Ivey, D. 2004).

Cultural factors heavily influence viewing styles and media access—and, therefore, the impacts of TV on children and families. A number of studies have indicated that these may be:

- race/ethnicity—with African American children using proportionally more television and other screen media than other groups, even when all other social variables are controlled for (Roberts, D., Foehr, U. & Rideout, V. 2005); and

- class—working-class children in the UK also consume more screen media (Livingstone, S. 2002); household attitudes to media use—more than 50 per cent of US children live in households where the TV is on all of the time. In these ‘constant TV households’ (Medrich, E. 1979; Medrich, E. et al. 1982; Vandewater, E. et al. 2005), for example, parents allow children more unsupervised access to media and set less rules about when and for how long it can be watched (Roberts, D., Foehr, U. & Rideout, V. 2005). In addition, TV is often used by carers as a ‘babysitter’, helping harried parents find uninterrupted time for household chores, or a brief respite from childcare duties, and content may not be selected for age-appropriateness (Rideout, V. & Hamel, E. 2006).

Research has also examined the rise of the digital entertainment centre, in which the TV has regained its place as the focus of the living room (Mackay, H. & Ivey, D. 2004). Largely a UK phenomenon (though see Holloway, D. 2003), and enabled by cable and satellite subscription services, the TV as a digital technology, forms the centre of a multimedia convergence, used for accessing games, music, terrestrial television, movies and even email. The multichannel, interactive ‘reinvention’ of television, has been less a factor in Australia, where the penetration of subscription broadcasting services is lower than countries such as the US and UK. These different television possibilities notify us of the need to take into account cultural contexts when assessing research on media influences.

Television and the active audience

The history of academic research into the long-term impacts of television on children, families and society has been polarised around conceptions of powerful media—and consequently passive or powerless audiences/users—and powerful audiences/users, with correspondingly less influential media (Buckingham, D. 2000; Funk, J. et al. 2006; McQuail, D. 2005).

A passive or at-risk audience sector is seen as needing greater protection by regulation than a group perceived as less vulnerable to the influence of media content and commercial pressure. Historically, the dominant tradition in the US research literature concerning children and media has been ‘effects’ research (Barker, M. & Petley, J. 2001; Bryant, J. & Zillmann, D. 2002; Luke, C. 1990; Pecora, N., Murray, J. & Wartella, E. 2007), which we discuss in greatest depth in our account of the psychological literature on television violence and behaviour, later in this chapter.

ACTIVE AND CREATIVE VIEWERS

In the past two decades, a range of disciplines and fields of research have experienced a conceptual swing to privilege the notion of the power, or activity of the audiences/users of media (Fiske, J. 1987, 1989; Hall, S. 1993 [1974]). This paradigm shift has had the effect of placing more emphasis on the benefits rather than the harms associated with mainstream electronic media and new media use. In keeping with the medium’s more than 50-year history, the overwhelming proportion of this research concerns children and television.

In social science, behaviourism was challenged by newer paradigms, such as cognitive perspectives (or constructivism). Psychologists and media researchers began to envisage a process of cognitive activity rather than passivity in the youthful audience. Constructivist psychology considers the way in which children mentally process media information, how they understand, interpret and evaluate media content, engaging as active decoders (constructors) of meaning from electronic media texts (Buckingham, D. 1993, 2000; Luke, C. 1990; Rutherford, L. 2000). This type of research has often looked at formal qualities of programs, in the context of children’s attention to and comprehension of television programs.

A model of cognitive development, derived from the works of Piaget (1950), together with theories of mind, language and cognition, derived from Vygotsky (1978), Halliday (1978; Halliday, M. & Hasan, R. 1985) and others has been used to chart this intellectual use of media in line with a progressive, age-related developmental trajectory (Duck, J. & Noble, G. 1979; Noble, G. 1975, 1983; Van Evra, J. 2004; Wartella, E. 1979a, 1979b). There is also a large and varied research literature on the educational, social and language development uses of media that foregrounds the theme of the active user/audience, as well as the benefits deriving from use of media by children, young people and families (Livingstone, S. 2002; Unsworth, L. 2006).

Seminal Australian studies have been in the forefront of television research that examines the reception of television texts by an active audience. In her influential book, *The Lively Audience*, Patricia Palmer (1986) drew on the perspectives generated by British cultural studies (Hall, S. 1993 [1974]; Morley, D. 1980, 1988)², which had examined the role played by audiences in producing meaning from TV texts and situating reception by audiences in domestic and social practices. Ethnographic audience studies had shown that viewers were not just passive respondents to mass media ‘messages’, but incorporated TV use into their domestic routines, activities and power structures. Palmer’s underlying definitions of education as a social rather than an institutional process is also indebted to Australian observational studies from a developmental and social psychological perspective (Duck, J. & Noble, G. 1979; Noble, G. 1975, 1983; Noble, G. & Noble, E. 1979), which examine the social *and* cognitive benefits of children’s viewing.

Palmer’s observational study and survey are based on a symbolic interactionist perspective (Blumer, H. 1969; Goffman, E. 1959, 1974). This approach differs from accounts of children’s social development common at the time her study was undertaken, which viewed the child as a relatively passive organism whose actions are predetermined by environment or biology. Interactionist theory posits that the child is an active interpreter of situations. Further, rather than seeing meaning as something transmitted by texts, interactionism argues that meaning is constructed in the actions of individuals and groups towards ‘objects’ and others in a social setting mediated by shared meanings. Based on analysis of behaviour, talk and drawings, she finds that children watch TV for fun, excitement, to find out about the world, and to alleviate boredom. Developmental and gender differences in children’s television content preferences were also found (Palmer, P. 1986).

Palmer argues that children’s behaviour towards and around the TV set demonstrates their assumptions about the place of TV in their lives. She found that children’s viewing practice is routine, social, relaxed and comfortable, that it involves fascination with features of the technology, is combined with other activities such as playing with pets and homework (1986). In addition, in arguments later mobilised by television literacy advocates, Palmer finds that children’s use of television is expressive, involving ‘parasocial interaction’ (Duck, J. & Noble, G. 1979). She finds that children interact with television programs and presenters; engage in performance, and ‘remake’—for example, using media resources for play, narrative, and creation (Palmer, P. 1986).

Other cultural studies research uses the methodologies of semiotic and social semiotic analysis (Halliday, M. 1978; Hodge, B. & Kress, G. 1993). In the same year as Palmer’s study, semiotician Bob Hodge united with developmental psychologist, David Tripp, to produce a study that brought together theories of children’s cognitive development with an approach that also analysed the social basis of children’s construction of meaning (Hodge, B. & Tripp, D. 1986). The study combined a semiotic reading of a cartoon narrative with analysis of children’s talk about their understanding of the text.³ Their enunciation of the

active audience position is summarised in the ‘ten theses on children and television’, which concludes:

1. Children typically have the capacity to be active and powerful decoders of television, and programmes watched by them are potentially rich in meaning and cultural value; though not all programmes and ways of viewing are of equal benefit for all children ... (Hodge, B. & Tripp, D. 1986, p. 213)
2. Children’s cognitive and semiotic systems develop at least up until the age of 12, so that they not only prefer different kinds of programmes from adults, they also respond ... and interpret them differently ... (p. 214)
3. Children’s television typically carries dominant ideological forms, but also a range of oppositional meanings ... (p. 215)
4. It has long been known that the reality factor—television’s perceived relation to the real world—is variable ... But the ability to make subtle and adequate reality judgments about television is a major developmental outcome that can only be acquired from a child’s experience of television ... (p. 215)
5. All children need some fantasy programmes, such as cartoons for younger children. All children, particularly older ones, also need some programmes which touch more closely their reality ... (p. 216)
6. Media violence is qualitatively different from real violence: it is a natural signifier of conflict and difference, and without representations of conflict, art of the past and present would be seriously impoverished ... (p. 217)
7. Meanings gained from television are renegotiated and altered in the process of discourse, and in that form have social status and effect ... (p. 217)
8. General ideological forms have an overall determining effect on interpretations of television ... (p. 217)
9. The family is not simply a site for countering the meanings of television, it is also active in determining what the meanings will be ... (p. 218)
10. The school is a site where television should be thoroughly understood, and drawn into the curriculum in a variety of positive ways ... (Hodge, B. & Tripp, D. 1986, p. 218).

Reality-defining effects

In their recent review of media content, Millwood Hargrave and Livingstone (2006) report that much recent research on television has focused on the ways in which television might influence attitudes and behaviour, the effects of television content on the sexualisation of the young and other development processes (such as attitudes towards body image or substance abuse), and the effects of reality-defining variables such as stereotypes on audiences. Such stereotyping and formation of ideas about what the ‘world we live in’ is really like also extends to ostensibly factual genres such as news. Taken together, these media representations are said to produce ‘reality-defining effects’.

CONTENT ANALYSES

Given the cross-disciplinary nature of media research, there are various theoretical grounds on which media effects are induced from media content. A number of the studies we report on use content analysis techniques. They examine the content of programs, making assumptions about the way in which audiences will receive and be affected by it. Few of these studies endorse what we describe elsewhere as the ‘active media’ tradition; that is, they assume the users are more passive receivers of media content, rather than ‘active’ decoders and resisters of mainstream media ‘messages’.

The most influential theories used to explain how program content influences perceptions and attitudes are ‘social learning theory’ (psychology) and ‘cultivation theory’ (communication studies). While social science researchers generally explain the influence of media content on

attitudes and behaviour by means of ‘social learning theory’ (Bandura, A. 1977a, 1977b, 1986), mass communications research often invokes ‘cultivation theory’, which suggests that television, in particular, ‘is a powerful transmitter of a consistent cultural perspective’. Heavy viewers of particular content areas (such as news, or narratives concerning sexual relationships and practices) will in time come to adopt the dominant perspectives in prevalent content (Brown, J.D., Steele, J. & Walsh-Childers, K. 2002; Traudt, P. 2005; Vergeer, M., Lubbers, M. & Scheepers, P. 2000).

Some feminist theory also examines the way in which media ‘representation’ constructs sexual ‘ideology’, thus causing negative attitudes to women and positive inclinations to enact violence against women and children (Sharp, E. & Joslyn, M. 2001). Cultural studies, while focusing on ‘active audience’ participation at the level of the individual viewer, has also used the concepts of ‘discourse’ and ‘ideology’ to study how media content can have effects on how power relations are understood within cultures at the ‘macro’ level (Thwaites, T., Davis, L. & Mules, W. 1994).

SEXUAL CONTENT

In a review of research on sexual content in the US media, Malamuth and Impett found substantial levels of sexual content in television. Their literature review excluded sexually explicit or pornographic material, focusing rather on sexual appeals or depictions embedded in the narratives of prime time television, soap operas and advertising, for example, a soap opera, ‘in which some of the scenes, although typically not a majority, include references to or actual portrayals of sexual interactions’ (2001). They concluded that a great deal of content depicted or implied premarital and extramarital sex, and that the overall level of sex in the media was rising (see also Brown, J.D. 2002; Brown, J.D. et al. 2006; Cope-Farrer, K. & Kunkel, D. 2002). Various consequences of sexual acts are depicted, not always negatively. For example, harassing sexual advances are often depicted in a humorous way, and males and females are frequently shown in stereotypical roles. Their review found that children and adolescents are regularly exposed to sexual media and that, in some circumstances, their judgment, attitudes and sexual behaviours are likely to be affected. On the other hand, they find no data to support the contention that embedded sexual content on television contributes to ‘moral degeneracy’ or a fundamental shift in social values (Malamuth, N. & Impett, E. 2001).

British studies have also reviewed the amount of sexual material portrayed on television. Millwood Hargrave and Livingstone cite recent content samples undertaken on behalf of broadcasting stakeholders, which showed that 21 per cent of programs contained sexual activity (often ‘mild’ examples, such as kissing) and the 9.00 pm watershed was effective in restricting more extreme examples of sexual activity. The sample found that most portrayals were shown within established relationships (Cumberbatch, G., Gauntlett, S. & Littlejohns, V. 2003; Millwood Hargrave, A. & Livingstone, S. 2006). British findings exemplify cultural differences in interpretation in that ‘established relationships’ are not necessarily stipulated to be marital relationships. In addition, the British studies find few links between sex and violence in television portrayals.

Other studies also use content analyses to argue for cultivation effects from long-term exposure to sexual messages across the television landscape (Biely, E., Cope, K.M. & Kunkel, D. 1999; Brown, J.D. et al. 2006).

Studies of reality-defining effects have generally focused on gender, race, disability and, to a lesser extent, age. Though not all of this research specifically addresses effects on children, heavy viewers of television by definition watch a large proportion of non-age-appropriate material, and many studies of sexual content in media infer the effects on young people from

consumption of 'prime time' content. Content analysis techniques have analysed media depictions of social roles, sexuality, employment, motherhood, relationships and power (Meyer, 2003; Glascock & Ruggiero 2004; Ganahl, Prinsen & Netzley 2003). These studies argue that television is a powerful socialising agent and is particularly influential in the arena of gender identity (Barner, M.R. 1999; see also Biely, E., Cope, K.M. & Kunkel, D. 1999; Bragg, S. & Buckingham, D. 2002; Eyal, K. & Kunkel, D. 2005; Signorielli, N. 2001; Signorielli, N. & Bacue, A. 1999).

Another content analysis examined proportional gender representation in 1,337 commercials with 5,527 characters (male and female actors). The study found that the ratio of women/girls to men/boys with primary acting roles was significantly disproportionate when compared with the Census Bureau's population statistics, under-representing women and girls (Ganahl, D., Prinsen, T. & Netzley, S. 2003). Other research examining gender representation includes depictions of working roles (Banet-Weiser, S. 2004), and depictions of female adolescents in children's programs (Banet-Weiser, S. 2004).

Other studies have examined the representation of sexual orientation in prime time television (Edwards, M. 2004; Herman, D. 2003; Silverman, R. 2001; von Feilitzen, C. & Carlsson, U. 2000). Research has also analysed stereotypical constructions of masculinity (Vavrus, M. 2002), with a particular focus on homosexuality (Battles, K. & Hilton-Morrow, W. 2002; Clarkson, J. 2005; Hart, K. 2000). However, the greatest proportion of research into masculinity has been in the context of television consumption and violence, rather than sexual orientation (Eyal, K. & Rubin, A. 2003; Scharrer, E. 2001).

RECEPTION AND AUDIENCE STUDIES

While content analysis has been a popular method for inducing effects on audiences from 'sexual' media, there have also been a number of qualitative research studies on how audiences receive television depictions of sexuality and social roles. Many of these endorse the 'active audience' paradigm, particularly British and Australian studies.

Some, like Signiorelli (2001), also report on quantitative and experimental studies on actual audiences. In her major review of US research, which has examined television gender roles and their contribution to stereotypes, Signorielli makes the case for 'cultivation' effects from children's viewing, proposing that television must be studied as a 'collective symbolic environment' of messages that strongly contribute to the complex process of socialisation and enculturation (Signorielli, N. 2001). She acknowledges that studies of gender cultivation effects are hampered because it is virtually impossible to find control groups who have not been exposed to television. However, she finds that studies and meta-analyses demonstrate small but significant effects, with high-volume TV viewers expressing stronger views on gender-specific roles, occupations and household duties. Stereotyping of attitudes concerning occupation were particularly noted in young children, with girls readily able to tell researchers what they would do when they grew up were they a boy, but boys unable to say what they would do were they a girl (Durkin, K. & Nugent, B. 1998; Signorielli, N. 2001).

Other US studies have attempted to link consumption of sexual media content with attitudes to sexuality and sexual behaviours. Pardun et al. surveyed more than 3,000 children aged 12–14 years about their media diets. A smaller sub-sample was interviewed to record their attitudes and behaviours (self-report). They noted a substantial correlation between the amount of sexual media exposure with adolescents' sexual activity levels, or intentions to be sexually active in the future (Brown, J.D. et al. 2006; Pardun, C., L'Engle, K. & Brown, J.D. 2005). They argue that film and music, rather than television, are the main avenues of influence.

Buckingham and colleagues, in several studies, employ the active audience paradigm to supply a 'corrective' to US research emphases. British children (6–7 years and 10–11 years) were interviewed in a study examining the way in which representations of sexual behaviour on television are understood and interpreted, and how children judge whether or not content is suitable for them (Kelley, P., Buckingham, D. & Davies, H. 1999). They found instances of the 'third person effect', in which children younger than the children interviewed were deemed in need of protection from potentially harmful content. The researchers also found that, in peer contexts, knowledge of media content is used to display gendered identities.

Focusing more particularly on children's attitudes to depictions of sexual orientation, Buckingham and Bragg found that gender, family and peer contexts influenced attitudes to homosexuality in the media (2003). They found that children place depictions of sexual activity within existing moral frameworks, and seek to be recognised as capable of exercising moral choices and judgements.

A qualitative Australian study of adolescents' gender-related perceptions of television characters, found that 'social desirability' factors were influential in the way teens responded. While acknowledging that gendered identities are actively negotiated by adolescents in the context of both media and non-media discourses, they found that traditional gender values were transmitted by television content (Keddie & Churchill 1999).

A number of qualitative studies document adolescents' use of media as a means of accessing information about sexuality and sexual health (Buckingham, D. & Bragg, S. 2003, 2004; Vickberg, S. et al. 2003; Treise, D. & Gotthoffer, A. 2002; Walsh-Childers, K., Gotthoffer, A. & Ringer Lepre, C. 2002). Often more 'private' media, such as magazines and the internet, are the media of preference for finding out about 'stuff you couldn't ask your parents about' (Treise, D. & Gotthoffer, A. 2002).

Using both qualitative and quantitative methods, Buckingham and Bragg surveyed the use of media by 9–17 year-olds in the context of their personal relationships and identity formation. They found that while children preferred to learn about sex from the media, they also shielded themselves from material with which they felt they were not yet able to cope, or merely found disgusting. Encountering sexual content of this nature when parents were present was particularly embarrassing, and children used tactics like covering their eyes, manufacturing excuses to leave the room, or engaging in explicit condemnation of the material viewed. They also found that children displayed awareness of the constructedness of sexual imagery in advertising and music videos, together with 'media literacy' skills that enabled them to discern narrative and characterisation strategies in sexual storylines in both drama and soap operas (Buckingham, D. et al. 2005; Buckingham, D. & Bragg, S. 2003, 2004). Significant gender differences were also found in relation to depictions of sexuality, which is also borne out in Australian research on children's attitudes to sexual media content (Nightingale, V. 1996; Nightingale, V. & Griff, C. 2000; Sheldon, L., Ramsay, G. & Loncar, M. 1994).

BODY IMAGE

Research has examined the impact of television (as well as other forms of media) on children's perception of themselves, particularly regarding body image. Generally, the findings are that television viewing has little impact on body image, and that contextual influences such as peer and family mediation may have greater impact (Holmstrom, A. 2004; Nathanson, A. & Botta, R. 2003). An Australian researcher found that television viewing may cause dissatisfaction with body image, but that magazine consumption was more influential (Tiggemann, M. 2003). Other studies have found that media may have positive effects on self-perceptions, by advocating healthy lifestyle images (Millwood Hargrave, A. & Livingstone, S. 2006; Taveras, E. et al. 2004). Perception of body image has also been studied in relation to

music videos—a significant content area in both terrestrial and cable television schedules. Researchers have suggested that music videos may be even more influential than other television program genres (Borzekowski, D., Robinson, T.N. & Killen, J.D. 2000; Millwood Hargrave, A. & Livingstone, S. 2006).

REPRESENTATION OF ETHNIC MINORITIES

Content analyses have examined representations of minority groups in television programs, some linking variables of race and class together (Signorielli, N. 2004). Representation of race and class has also been noted in research on violence on television (Dixon, T. & Linz, D. 2002; Mastro, D. & Robinson, A. 2000). Gender, sexuality and body image have also been assessed in relation to ethnic difference (Nathanson, A. & Botta, R. 2003; Patton, T. 2001; Poran, M. 2006). However, the greatest amount of focus in the research literature has been on the portrayal of race in relation to crime. Studies find a prevalence of non-white (usually male) television characters associated with criminal activity (Chiricos, T. & Eschholz, S. 2002; Chiricos, T., Eschholz, S. & Gertz, M. 1997; Dixon, T., Azocar, C. & Casas, M. 2003; Eschholz, S. et al. 2002; Eschholz, S., Chiricos, T. & Gertz, M. 2003; Mastro, D. & Kopacz, M. 2006; Mastro, D. & Robinson, A. 2000; Mastro, D. & Stern, S. 2003; Poindexter, P., Smith, L. & Heider, D. 2003; Stern, S. & Mastro, D. 2004; Tamborini, R. et al. 2000).

Studies using qualitative research methods have examined audience reception of media representation of race and ethnicity. Millwood Hargrave found that a large number of racial minority groups in the UK are suspicious of television depictions of minority communities, particularly in the area of news reporting (Millwood Hargrave, A. 2002). Studies have also found that complaints concerning negative portrayals of Muslims on television news has increased since the New York attacks on September 11, 2001 (Gillespie, M. 2002; Millwood Hargrave, A. & Livingstone, S. 2006).

A research project undertaken on behalf of the Australian Broadcasting Authority in the early 1990s found that Aboriginal people were rarely seen on Australian television, and that most respondents felt that they saw Aboriginal people represented less than black Americans (Nugent, S. et al. 1993). The difference in viewer exposure to minority ethnic groups was reflected in the study's content analysis of drama programs made in Australia, Britain and the US, and screened on the ABC and three Sydney commercial TV stations in a sample week. The researchers surveyed 26 hours of programming. The 12 hours of Australian-made programming did not show any Aboriginal people, while the 14.5 hours of US drama screened depicted 35 black American actors.

More recent trends have seen representation of non-Anglo characters in Australian television drama rise significantly, with almost one quarter of roles now taken by members of ethnic minorities, Indigenous people are still seen less than actors from other ethnic groupings (Jacka, M. 2002). Using primarily a textual analysis methodology, one study examined depictions of young Indigenous masculinity in Australian teen films, arguing that questions of cultural difference and inequality were masked by storylines that emphasise universal themes of 'coming of age' (Rutherford, L. 2004). Using a different approach to the medium of TV as it influences the politics of culture for Indigenous identity, Eric Michaels describes the production of television by Aboriginal Australians as enabling reclamation of time flexibility, and definitions of locality and kinship, which are threatened by standard, centralised broadcasting (Clarsen, G. 2002; Michaels, E. 1987).

Studies commissioned by broadcasting regulatory bodies have argued for greater representation of minorities in mainstream television, to promote diversity and social inclusiveness (Broadcasting Standards Commission 2003; Nugent, S. et al. 1993). Over-representation of minorities in positive character roles can be a result of 'mainstreaming'

minority groups in television production. A study of US prime time police dramas found that, although police officers were more likely to use excessive force when the perpetrators of a crime are young people from an ethnic minority, they also found that minority groups were over-represented as actual police officers and under-represented as criminals when compared with 'real-world' statistics (Mastro, D. & Robinson, A. 2000).

Cultivation theory suggests that such representations come to play a part in defining social reality for some viewers in some contexts. However, there are mediating factors affecting reception of the 'reality-defining' content. Gilliam et al., who found that the effects of depictions of race varied on the basis of where viewers lived discuss the context of viewing:

When exposed to racial stereotypes in the news, white respondents living in white homogeneous neighbourhoods endorsed more punitive policies to address crime, expressed more negative stereotypic evaluations of blacks, and felt more distant from blacks as a group. Whites from heterogenous neighbourhoods were either unaffected or moved in the opposite direction, endorsing less punitive crime policies, less negative stereotypes and feeling closer to blacks as a group as a result of exposure to the stereotypic coverage (Gilliam, F., Valentino, N. & Beckmann, M. 2002).

REPRESENTATION OF DISABILITIES

It has generally been noted that there is an under-representation of people with disabilities in television programs (Broadcasting Standards Commission 2003; Ofcom 2005a). Portrayals of mobility disabilities have been noted to be the most common forms of disability represented, but it is suggested that that is because these disabilities are the most visible (Millwood Hargrave, A. & Livingstone, S. 2006).

In the context of how children are perceived more generally, it is significant that Ofcom's content analysis research report found that roles 'filled by people/actors with disabilities were more commonly those of children and retired people, both of which can be associated with vulnerability'. It also found that disability was 'central' or 'relevant' to the majority of representations of people/characters with disabilities in programs in their sample year (2004) a finding consistent with previous years' analyses (Ofcom 2005a).

A broad-ranging and controversial UK study (Sancho, J. 2003) examined attitudes towards the representation of people with disabilities, including taboo areas such as sexuality, attractiveness and discriminatory practices within the television production industry. Considering the views of the small number of children who were themselves people with disabilities, or were carers, the study noted that:

All the children interviewed ... are searching for disabled role models on television, but it is likely that they are struggling to find many examples. It is vital that children are provided with positive portrayals of disability, particularly within the children's genre.⁴

Representation of disability in Australian television genres has been studied, though not specifically addressing influences on children (Goggin, G. & Newell, C. 2005). The authors examine the sometimes uncomfortable depictions of persons with disabilities in the Olympic and Paralympic Games, and in news coverage of sporting and other cultural events. They also examine the 'irreverent parody' of Australian life and myths in the popular SBS situation comedy, *Pizza*, arguing that dramatisation of characters with disabilities in this program is used to confront instances of 'political correctness'. They highlight the 'new paternalism' that they find to have developed around discussions of disability in the media.

Children's emotional responses to television

Studies have examined children's responses to images of violence, danger, or catastrophic events, their immediate coping strategies, and their long-term perceptions, anxieties and fears. Many of these examine responses related to factual programs, such as news and current affairs, and more recently, images of pain and humiliation in reality television genres (von Feilitzen, C. 2004), while others examine fright responses to fantasy genres.

As with other reality-defining effects, the impact of television on children's anxieties and perceptions about the risk in everyday life has been studied according to 'cultivation' theory—that is, television viewing is assumed to contribute to the child's perception of how dangerous the world is. Heavy viewers perceive that the chances of being a victim of violence are greater than do light viewers (Gerbner, G. et al. 1994). In a US study of children's fears from television and other media, Cantor reports that children are frightened more often than they admit, or than their parents believe, some suffering sleep disturbances and anxieties that persist after the initial fright response (Cantor, J. 2001). Both surveys and experimental methodologies were employed in the research. While most responses are short-lived, some effects can last for longer periods (Harrison, K. & Cantor, J. 1999).

DEVELOPMENTAL DIFFERENCES AND FEAR

There are developmental differences in what frightens children, and in what measures will be most effective in helping them cope with media images which are scary. These findings are consistent with observed changes in children's fears in general (Cantor, J. 2001). Preschool children are frightened by fantasy elements (the dark, supernatural beings) and by physical aspects (such as dangerous animals, or a monstrous character in animated cartoons or film). Older children can distinguish between fantasy and reality and are thus more likely to be made anxious by 'real' physical or social fears, such as personal injury, death of family members, political or global issues. Surveys of parents have found that fear produced by fantasy programs decreased with the child's age, while fear induced by news reporting increased with age (Valkenburg, P., Cantor, J. & Peeters, A. 2000).

Effectiveness of coping strategies also varies with age. Older children are able to cope by telling themselves 'it's not real'. This relies on ability to make 'modality' judgments about what is real and what is not, and to process information verbally (cognitive strategies). 'Non-cognitive strategies' (holding a blanket, getting a warm drink) are most effective for younger children. Cantor's review of research also finds that parents are mostly unaware that telling a young child that a scary television image is 'not real' will be ineffective (Cantor, J. 2001). Desensitisation works well for both older and younger children.⁵

These developmental differences may partially account for the different emphasis in British, Australian and US research. Qualitative studies that interview children and analyse their discourse ('children talking television') are usually conducted with older children who can express themselves more fluently. These children are less likely to be frightened by grotesque or cartoon violence, and more likely to become anxious from the more abstract dangers induced by television news reporting of war and catastrophic events.

While Buckingham, in his study of children's emotional responses to television, did interview some children in the 6–7 years age-group, most of his qualitative analysis is reserved for narrative commentary from older children (Buckingham, D. 1996; Hodge, B. & Tripp, D. 1986). Australian and British studies also find children more able to cope with potentially distressing media images (Millwood Hargrave, A. 2003; Nightingale, V. & Griff, C. 2000; Sheldon, L., Ramsay, G. & Loncar, M. 1994).

Psychological studies on television violence and behaviour

Any statement that a specific act of violence is ‘caused’ by a single event is an oversimplification. Numerous factors influence the development of aggressive tendencies in children and young adults in the long run and the commission of violent acts in the short run [including: b]iological predispositions ... A wide range of community, peer, and family characteristics can socialize children to be more or less aggressive ... and there are situational factors (e.g. frustrations, guns, insults) ... that can stimulate aggression or non-aggression in almost anyone ... (Bushman, B. & Huesmann, L.R. 2001).

Cultural studies research has tended to dismiss findings from the psychological effects tradition, on the grounds that its experiments lack relevance to real world settings, and that it does not sufficiently allow for mediating factors (see Alexander, A. & Hanson, J. 2006). The citation above, from two of the ‘effects’ tradition’s most respected names, demonstrates the subtlety in the psychological tradition that is not widely appreciated among culturalist media scholars. However, these social scientists do differ, in kind as well as in degree, from cultural researchers in their weighting of the importance of the experimental research literature. As Bushman and Huesmann explain, their theme ‘is *not* that media violence is *the* cause of aggression and violence in our society, or even that it is the *most* important cause. The theme is that accumulating research evidence has revealed that media violence is *one* factor that contributes significantly to aggression and violence ...’ (2001).

In this section, we review the psychological research on television violence and behaviour, outlining the ‘accumulation’ of research evidence from this social science perspective. To describe or understand the relationship between exposure to television behaviours and subsequent real-world behaviours, researchers must make decisions about how to define and assess violent/aggressive behaviour. However, there are differences in the definitions and terminology used across research studies. For example, some studies define ‘violence’ solely in terms of physical behaviours, while others use definitions based on the level of harm to the victim. The term ‘aggression’ may be used in a general manner to refer to behaviours that result in any type of harm (physical or psychological). Other researchers use more specific definitions of aggression, for example, direct versus indirect; physical, verbal, emotional or psychological aggression.

Since its introduction, television has been linked with concerns about its potential influence on viewers’ wellbeing. In particular, a large amount of research has accumulated around issues of harm in exposure to television violence. Researchers have subsequently sought to find *empirical* evidence of a relationship between television violence and aggressive behaviour, to determine the extent to which any relationship can be viewed as causal, and to provide explanations regarding the nature of any harmful effects.

As in any area of psychological study, a range of research designs (including cross-sectional, experimental, and longitudinal studies) has been employed to investigate the relationship between television viewing and violent behaviours. Each methodology has strengths and weaknesses. Therefore, the findings from studies exemplifying each methodology will be examined separately to gain a better understanding of the overall findings of research in the area.

CROSS-SECTIONAL STUDIES⁶

Very early studies made use of surveys to identify potential differences between television viewers and non-viewers. These included research examining children’s viewing habits and preferences (Schramm, W., Lyle, J. & Parker, E.B. 1961), as well as some discussion of the impact on behaviours (Himmelweit, H., Oppenheim, A.N. & Vince, P. 1958). These early

studies also provided opportunities to compare the behaviours of children before and after television exposure. Subsequent research has become more focused on specific television-viewing behaviours, comparing different individual factors such as duration of media exposure and viewer's age.

Studies have consistently produced results showing that the aggressive or violent behaviours exhibited by young children are correlated with the amount of aggressive or violent media content to which they are exposed (Comstock, G. 1980; Friedrich-Cofer, L. & Huston, A. 1986; Huesmann, L.R. & Miller, L.S. 1994). Furthermore, children who report preferences for violent or aggressive programs have been shown to display higher levels of violent behaviours. (Singer, M. et al. 1995). Increased exposure has also been associated with higher levels of psychological trauma (Singer, M. et al. 1995), and these effects have also been found for older viewers (Johnson, J. et al. 2004).

Although correlations have been found across age groups, it appears that relationships are more pronounced for younger age groups (King, M. & Multon, K. 1996; Paik, H. & Comstock, G. 1994). Studies looking at general aggression following television exposure have reported slightly higher correlations for children aged 7–12 years than for teenagers and adults (Eron, L. et al. 1972; Huesmann, L.R. et al. 2003). These results have been explained by potential differences in young children's cognitive development—that is, a decreased ability to make distinctions between reality and fantasy, to understand motivations of characters and to comprehend the consequences of actions.

Summarising the results from these cross-sectional studies, there is evidence of a relationship between exposure to television violence and aggressive behaviour. While they do not demonstrate causality, higher rates of television violence are associated with higher rates of aggressive behaviours, and this association is found consistently across studies. In one of the most comprehensive meta-analyses of research into the relationship between television exposure and violence ever undertaken,⁷ Paik and Comstock (1994) examined results from studies conducted between 1957 and 1990. Their analysis provides evidence of a significant relationship between television viewing behaviours and aggression.⁸

EXPERIMENTAL STUDIES

Cross-sectional studies are generally correlational in nature, that is, they record associations between two variables. They do not provide conclusive evidence of causation, since the direction of the associations might be reversed—that is, children who are aggressively predisposed may be attracted to viewing violence on television. It is also possible that there are additional factors that explain both behaviours. Experimental studies provide researchers with control over the amount and level of television violence that participants are exposed to, allowing causal inferences to be made. Participants are generally randomly assigned to either an experimental, for example, watching violent media, or control group to minimise potential confounding variables.

Reviews of experimental studies have consistently shown that children and adolescents exposed to violent images on TV show significantly higher rates of aggression than non-viewing peers (Bushman, B. & Huesmann, L.R. 2001; Geen, R. 1990; Huesmann, L.R., Moise, J. & Podolski, C. 1997). This includes increases in physical or verbal aggression, as well as increased aggressive thoughts or feelings.

Children have been found to behave more aggressively towards other inanimate objects and other people. In a famous (and not uncontroversial) experiment, Bandura, Ross et al. (1963) used experimental methods to examine children's responses to films of adults modelling novel aggressive behaviours towards a doll. Children in the experimental group were found to

be more likely to imitate the aggressive behaviours, for example, punching the doll, especially if the behaviours had been rewarded on-screen. This study has often been derided, since other variables, such as the children's frustration, were also in play. However, Bandura's purpose in the experiment was not to suggest that punching a toy was equivalent to real-life violence, but that children were able to *learn* behavioural repertoires from adults through the mediation of the screen (see Kline, S. 2003).

Viewing television violence has also been reported to result in immediate increases in aggressive thoughts and emotions (Anderson, C. 1997; Bushman, B. 1998). Bjorkqvist (1985) found that participants aged 5–6 years displayed higher rates of aggressive behaviours after viewing a violent film. Josephson (1987) found a similar increase in aggressive behaviours for boys aged 7–9 years who had viewed a violent film before participating in a hockey game. The inclusion of a specific cue within the film and subsequent game was found to further stimulate aggressive behaviours. Additional experiments have shown that viewing violence can lead to serious physical aggressive behaviours, even in juvenile detention settings where such behaviours are particularly problematic (Leyens, J. et al. 1975; Parke, R. et al. 1977).

Finally, research conducted with young children (Drabman, R. & Thomas, M. 1974; Thomas, M. & Drabman, R. 1975; Thomas, M. et al. 1977) has found that children shown a violent film were more accepting of subsequent displays of real-life violent behaviours. These children were less likely to ask for adult intervention to prevent other children fighting than peers who had watched a neutral film.

In summary, these experimental studies provide empirical support for a causal relationship between exposure to television violence and subsequent aggressive behaviours. Well-designed experimental studies have provided evidence that television violence leads to increases in aggressive thoughts, feelings and behaviours across children of all ages. Furthermore, meta-analyses have found these effects to be consistently significant (Paik, H. & Comstock, G. 1994). Their findings, therefore, provide evidence that exposure to television violence does have the potential to result in (short-term) increases in aggressive behaviours, including behaviours that may be classified as serious.

Experimental studies are not without their problems. Questions have been raised as to whether behaviours elicited in the unnatural context of a laboratory setting can be generalised to real world situations. The non-domestic viewing environment and the presence of the experimenter have both been suggested as factors that may have influenced results. Critics have argued that children exposed to television violence in these settings may feel that antisocial behaviour is legitimised, or even expected, by the experimenter in these contexts, leading to the subjects performing 'as required' (Van Evra, J. 2004). More importantly, the long-term behavioural effects of exposure to television violence cannot be confidently inferred from the short-term effects that have been measured.

LONGITUDINAL STUDIES⁹

Although longitudinal studies provide the best measure of long-term effects, their cost (in time and money) has meant that there have been few conducted. There have been two major longitudinal studies examining the relationship between television exposure and later aggression in children and adolescents. One of the earliest followed a group of 856 children from the age of eight years for approximately 10 years (Eron, L. et al. 1972). The study reported that boys' exposure to violent media at eight years of age was significantly correlated to aggressive and antisocial behaviours at age 18. This relationship remained even when controlled for initial aggressiveness, social class, education, and overall amount of TV viewing (Lefkowitz, M. et al. 1977). In a 22-year follow-up of the same boys, it was found that early viewing of media violence was independently (although weakly) related to adult

criminal behaviour (Huesmann, L.R. 1986). However, there were important gender differences—no relationship was found between television viewing and aggressive behaviour for the girls tested.

A more ambitious study by Huesmann and colleagues commenced in 1977, testing children from five countries over a period of three years (Huesmann, L.R. & Eron, L. 1986; Huesmann, L.R., Lagerspetz, K. & Eron, L. 1984; Huesmann, L.R. et al. 2003). Television viewing behaviours of children as young as six years of age were found to predict subsequent aggression in childhood. However, the nature of the effects varied across the populations tested. Synchronous effects were found for boys and girls across countries (Huesmann, L.R. & Eron, L. 1986), but gender and cultural differences were found in the extent of longitudinal effects. In the US, girls' earlier exposure to TV violence had a significant effect on later aggression, even after controlling for initial aggression, education, and socio-economic status (SES). In a 15-year follow-up of the children, significant relationships between childhood viewing of television violence and physical/general aggressive behaviours in adulthood were found for both genders studied.

In summary, the longitudinal studies provide support for the idea that exposure to television violence is associated with long-term behavioural effects. A recent meta-analysis of longitudinal studies conducted by Anderson and Bushman (2002) found a small, but statistically significant effect size.¹⁰

INTERPRETATION OF FINDINGS

The findings reported in these cross-sectional, experimental and longitudinal studies provide consistent evidence for a relationship between television violence and aggression. Taken together, these studies provide evidence that there may sometimes be a causal relationship, and that the relationship may sometimes persist over time. Statistically significant effect sizes have been found across all three major research designs, but they vary in their size. The effect sizes reported in the literature reviewed here fall within the category considered by social scientists to be 'small' to 'medium' effects (Cohen, J. 1988). These descriptions have the potential to be misleading when talking about the practical consequences. Small effects may not necessarily be unimportant.

As another way of thinking about this question, Bushman and Huesmann (2001) compare various effect sizes reported in medical or health-related research fields to those found in television violence research. While the consequences of the 'conditions' studied by the researchers in television violence studies are unlikely to be as grave, the effect sizes give a useful indication of the strength of the relationship between television and violence for those not familiar with statistics.

Effect sizes reported for the relationship between television and violence turn out to be only marginally smaller than that reported for smoking and lung cancer, and are greater than effect sizes reported for condom use (negative correlation) and HIV transmission, or passive smoking (positive correlation) in the workplace and incidence of lung cancer (Bushman, B. & Anderson, C. 2002).

As we noted in the beginning of this section of the review, these results do not suggest that exposure to television violence is the sole or even a necessary cause of subsequent aggressive behaviours. There are likely to be a number of factors that contribute to aggressive behaviours, of which television is just one. However, exposure to television violence can be considered a 'risk factor', to use terminology from the public health literature, for aggressive behaviours.

RISK FACTORS

Most psychological researchers, therefore, now agree that viewing violence on television has the potential to affect an individual's behaviour, psychological wellbeing, and beliefs about the world. However, it is just one factor influencing behaviour and any potential effects are likely to be mediated by other factors, for example:

- Individual factors—for example, the viewer's age, viewing habits, family background
- Contextual factors—for example, how violent content is portrayed in television programming (Bandura, A. 1977a, 1977b, 1986, 1989). In a review of the research, the US-based National Television Violence Study (NTVS) identified such contextual factors and their subsequent effect on the extent to which aggressive behaviours may be learned (*National Television Violence Study 1996; National Television Violence Study 1997; National Television Violence Study 1998*). The factors include: attractiveness of the perpetrator; morally justified motivations for violence (Berkowitz, L. & Powers, P. 1979; Geen, R. 1981); presence of weapons (Berkowitz, L. 1990; Carlson, M., Marcus-Newhall, A. & Miller, N. 1990); extent and realism of violence; consequences for the perpetrator and for the victim.
- Predisposition to aggression—researchers have posited that characteristically aggressive individuals have more extensive aggressive associative networks, and are more susceptible to the effects of television violence (Bushman, B. 1995, 1996; Bushman, B. & Geen, R. 1990). In addition, experimental studies have shown that viewers with higher levels of characteristic aggression display more aggressive behaviours, thoughts, and feelings immediately after watching violent media than their less aggressive peers (Bushman, B. 1995, 1996; Bushman, B. & Geen, R. 1990; Josephson, W. 1987; Russell, G. 1992).
- Gender and socio-economic status (SES) have also been shown to be mediating factors.

DESENSITISATION TO VIOLENCE

The psychological literature has also linked high rates of violent television viewing with emotional desensitisation towards violent and aggressive behaviour in the real world. Some studies suggest that repeated exposure leads to a decreased response towards televised violence and, in turn, real life violence (Drabman, R. & Thomas, M.. 1974). Children who are regularly exposed to a high volume of televised violence have been found to show lower levels of arousal when presented with violent imagery (Cline, V., Croft, R. & Courier, S. 1973; Thomas, M. et al. 1977). Other studies have suggested that related inhibitions about behaving in an aggressive manner are also lowered. For example, viewing violent television programming has been shown to result in a decreased incidence of acting to assist those who are the victims of violence (Donnerstein, E., Slaby, R. & Eron, L. 1994; Murray, J. 1997).

The effects that televised violence has on children's beliefs about their environment have also been researched. The high proportion of violent content on television has been linked to increased fear about the world and is particularly prevalent for children who identify with victims of violence on television (Rubinstein, E. 1983; Singer, D., Singer, J. & Rapaczynski, W. 1984). As a result, these children may overestimate the risk of violence directed towards them, leading to an increase in distrustful and self-protective behaviours (*National Television Violence Study 1997*).

In conclusion, the psychological literature on television and violence consistently finds a small but significant link between viewing violent content and negative effects on behaviour. However, as we argue later for other media, certain individuals or groups may be identified as more susceptible than others to the effects of violent imagery in media. In addition, in any

individual child's case, TV viewing, considered in isolation, is not likely to be highly useful in predicting later behaviour. Viewing of violent content is only one factor to be addressed within the broader context of social variables, such as family, communities and economic structures (Browne, K. & Hamilton-Giachritsis, C. 2005; Kline, S. 2003; Olson, C. 2004).

While there is consistent evidence in the scientific literature to support claims for short-term effects on arousal, thoughts and emotions, increasing the likelihood of aggressive or fearful behaviour such as bullying or fighting, there is only weak evidence for a substantial association between exposure to violent television programming and serious real-life crime. Those individuals with a predisposition to aggressive behaviours may be particularly vulnerable. For example, Browne and Hamilton-Giachritsis (2005) find that young violent offenders are particularly at risk from viewing violent media. Others draw attention to the major social and economic factors, the 'social ecology of the child', such as economic status, family and community support, which, when absent from children's lives, add to the accumulation of risk factors that make children more likely to learn and demonstrate aggressive behaviour (Gabarino, J. 2001; Kline, S. 2003).

EDUCATIONAL BENEFITS

In line with the larger Media and Society project, this review does not examine educational benefits in formal school settings. Our focus, therefore, will be on educational benefits from viewing in the home environment in discretionary time.

Criteria for educational benefits have not been universally agreed upon, with American studies measuring enhanced academic performance in school settings. Australian criteria, at least as expressed in definitions in the *Children's Television Standards*, assumes that watching 'P' and 'C' classified programs meets developmental needs of children at specific ages—needs which might be social as well as cognitive (Aisbett, K. 2000; Australian Broadcasting Authority 2001, 2005). That is, social learning outcomes are considered to be developmental benefits. Outcomes have rarely been measured long-term against performance in the classroom outside of the US, though a longitudinal study from New Zealand did find a negative correlation between amount of television viewing in childhood and later academic performance (Hancox, R., Milne, B. & Poulton, R. 2005).

Most of the research on educational benefits of television viewing in the home comes from the perspective of cognitive developmental psychology. The most studied group is the 'Stage 2' or 'pre-operational stage'—children aged from around three years to around six or seven years (Duck, J. & Noble, G. 1979; Hodge, B. & Tripp, D. 1986; Piaget, J. 1950; Singer, D. & Singer, J. 1998; Van Evra, J. 2004). This pre-operational child is the target audience for *Play School* and *Sesame Street*. According to studies on the televiewing 'styles' of pre-operational children, producers need to acknowledge the following developmental differences (Crawley, A. et al. 2002; Duck, J. & Noble, G. 1979):

- pre-operational children are 'egocentric'—that is, they conceive of themselves as both the 'centre and cause of all things', and are unable to perceive events from any point of view other than his/her own
- pre-operational children respond to the environment, including television in an all-or-nothing manner; characters are seen as either 'good' or 'bad' with nothing in between
- pre-operational children may believe that television is 'real', being unable to understand the concept of acting a part, and may also see puppets and cartoon characters as 'real' people
- they may be unable to recognize the same character in different situations (they cannot always 'conserve character', a skill which is required to understand complex narrative)

- Finally, young children cannot yet use ‘operations’ in thought. They cannot reverse the order in a logical or temporal sequence, therefore they cannot understand that stories (programs) have a structure, such as a beginning, a middle and an end (Duck, J. & Noble, G. 1979; Noble, G. 1983).

Studies of potential learning benefits from early television viewing have presented research to support their contention that children are cognitively active, goal-directed viewers, who use the formal features of TV to guide them towards content that suits their current developmental needs (Bickham, D., Wright, J. & Huston, A.C. 2001; Huston, A.C. et al. 2000; Huston, A.C. et al. 2007; Wright, J. et al. 2000). They find that there are benefits to children from viewing programs made with their developmental needs in mind. It should be noted that, in most US research, school-readiness, or preparedness for school, is one of these perceived developmental needs (Singer, D. & Singer, J. 1998).

Evidence in support of the findings of Bickham and his colleagues is drawn from two large-scale research projects undertaken by CRITIC (The Centre for Research on the Influences of Television on Children). The first of these, the Early Window Project, was a three-year longitudinal study of the effects of educational television viewing of children aged 2–5 years and 4–7 years in relatively low-income families. Four waves of data were collected and the study was rigorously controlled for other social, economic and ‘initial ability’ variables.

The second study, the Recontact Project, was undertaken 10–14 years later, recontacting 570 teenagers from the original survey cohorts, who had participated in the previous project when they were five years old. Significant consumption of educational television programming resulted in enhanced achievement in reading and mathematical skills. However, they also found that viewing at younger ages (2–3 years) had a greater impact than viewing from four years onwards, suggesting that there is a window of opportunity for very young children in which watching educational TV can have its longest and most powerful effects (Bickham, D., Wright, J. & Huston, A.C. 2001; Wright, J. et al. 2000). The researchers also found that, during this age group (four years onwards), viewing general (adult) entertainment programs and, to a lesser extent, commercial cartoons, was detrimental to the child’s academic future.

Long-term effects were tested in the Recontact Project. The follow-up study found positive relationships between preschool viewing of educational TV programs and high school transcript grades in English, science and mathematics, and negative relationships of general audience entertainment viewing with those same grades—although the correlations were much stronger for boys than for girls (Bickham, D., Wright, J. & Huston, A.C. 2001; Huston, A.C. et al. 2000).

These are correlational studies with no absolute evidence of directional cause. Critics of the survey methodologies employed (Van Evra, J. 2004) argue that self-reporting of viewing time, a critical variable, is likely to be hard for children or parents to estimate. Moreover, school performance is usually represented by test scores. As with television use, other factors such as attitudes, behaviour and cognition relate to reading.

Other critics suggest that correlations between low achievement and heavy TV viewing may be a result of a third factor, ‘namely, imitation of parents who do not have a strong interest in reading and model television viewing as an alternative leisure activity’ (Livingstone, S. 2002; Van Evra, J. 2004). Others argue that, even if excessive television viewing interferes with academic performance, one cannot isolate television from other activities such as sport, which occupy too much of a child’s discretionary leisure time (Hodge, B. & Tripp, D. 1986; Van Evra, J. 2004).

However, the studies reviewed by Bickham et al. do control carefully for variables such as education level of parents, child's initial ability and amount of parental reading to the child, which suggests that the 'third factor' criticism may be fairly weak in this case. More recent studies have also challenged the thesis that organised extra-curricular activities correlate negatively with school performance (Livingstone, S. 2002; Van Matre, J., Valentine, J. & Cooper, H. 2000).

In a 2007 review of 50 years of US research on television, cognitive development and educational achievement, the authors conclude that educational television has a substantial positive influence on children's educational achievement (Schmidt, M. & Anderson, D. 2007). Conversely, they also find that entertainment television viewing has a negative impact on achievement. Like most American studies of educational TV, the measure of educational achievement is the child's success in the early school years. The culturally specific emphasis lies in remediating perceived patterns of social disadvantage in significant minorities (ethnic and SES groups). Schmidt and Anderson's review cites many of the large and small-scale studies of the effectiveness of *Sesame Street* in this respect, which show that viewing the program was associated with emergent numeracy and literacy skills, especially for low socio-economic status children, even after numerous statistical controls were considered—such as parent education levels, ethnicity, income, frequency of parent reading to child, preschool program participation (Zill, N. 2000). Viewing educational programs was found to be associated with stronger reading skills in elementary school and better high school grades.

DISPLACEMENT

Schmidt and Anderson's review considers evidence for popular concerns that television viewing displaces more valuable cognitive activities and reduces reading achievement. As did earlier British researchers (Himmelweit, H., Oppenheim, A. & Vince, P. 1958), they find that TV viewing displaces 'functionally similar activities' such as 'radio listening, comic reading, and movie going' and 'unstructured marginal fringe activities' such as 'hanging out'. Comics and entertainment or general exhibition TV are both categorised as 'entertainment fiction', serving pleasurable but not necessarily 'improving' functions for both adults and children (Livingstone, S. 2002).

There is only weak evidence for displacement of more cognitively valuable activities. TV viewing was found to displace neither leisure-time book reading (Beentjes, J. & Van Der Voort, T. 1988; Mutz, D., Roberts, D. & Van Vuuren, D. 1993; Van Der Voort, T. 2001) nor homework for children. However, there was evidence that background TV viewing negatively affected success in homework tasks.¹¹ This was found to hold true for narrative genres such as soap opera, but not for genres like MTV that consisted mainly of music (Beentjes, J., Koolstra, C. & Van Der Voort, T. 1996; Pool, M., Koolstra, C. & Van Der Voort, T. 2003; Pool, M. et al. 2000).

READING ACQUISITION

The review did find some evidence that TV viewing in the first and second grades may negatively affect reading acquisition, although from third grade onwards TV viewing is unrelated to reading achievement (Schmidt, M. & Anderson, D. 2007). These effects were found to be content-dependent. No displacement of reading or educational activities was found from viewing educational programs, but there were negative impacts from viewing entertainment TV. The review suggests that less capable children may be particularly at risk. They suggest that children who find reading difficult may choose to watch more TV than fluent readers, thereby depriving themselves of further reading practice, or lowering the quality of their practice by combining it with television viewing. Thus heavy 'pre-operational'

or ‘Stage 2’ TV viewers may initiate a pattern by which they continue to fall behind their peers (Beentjes, J. & Van Der Voort, T. 1988; Schmidt, M. & Anderson, D. 2007; Van Der Voort, T. 2001).

ATTENTION SPANS AND HYPERACTIVITY

While the review found no evidence that short television segments or frequent visual change on television influences children adversely, they said that there is little research on the issue (Schmidt, M. & Anderson, D. 2007). In an interesting counter-thesis, Australian researchers Hodge and Tripp (1986) speculated that frequent visual changes were cognitively beneficial, although this was based on semiotic analysis of visual texts and analysis of older children’s discourse (talk) about their own viewing of cartoon programs.

Summary

This review finds that television is still the most pervasive and influential media in the lives of children and adults.

In line with media research more generally, research on children and television has in recent decades acquired newer theoretical paradigms that have challenged the existing concentration on harms, and have placed a competing emphasis on the benefits associated with television viewing.

Research suggests that television content influences children’s and adults’ perceptions about what the world they live in is ‘really like’, including their perceptions of gender roles and social diversity.

There is consistent evidence that exposure to violent television programs is linked to short-term increases in aggressive thoughts or behaviour. However, the links to long-term violent behaviour and actual crime are weak.

Most psychological researchers find that viewing violence on television is a risk factor for aggressive behaviours, and has the potential to affect an individual’s behaviour, psychological wellbeing and beliefs about the world. However, there is also broad agreement that there are likely to be various factors that contribute to these behaviours and beliefs, of which television is just one. Other factors are also likely to mediate any potential effects.

While children can be frightened by television content, findings of long-term negative effects are rare. There are developmental differences in what frightens children and what strategies are likely to help them cope with fears.

Studies have found that children and young people use television and other media as a means of accessing information about sexuality and sexual health in the context of their personal relationships and identity formation.

Researchers have argued that while television content can have influences, children are not just passive respondents. They are able to process media information and actively interpret and evaluate it.

Studies show only weak evidence that television displaces more cognitively valuable activities such as book reading or homework in the population as a whole. However, research also finds that background television viewing negatively affects success in homework tasks.

Researchers have found that children learn from television. Watching educational television in early childhood is associated with enhanced academic performance in later life. The same studies also show that viewing general entertainment television programs in the early preschool years is detrimental to the child's academic future.

Television viewing and 'talking about TV content' is an important part of social interaction and cultural literacy, particularly for older children.

¹ The literature review by Pecora et al. excludes all the research literature from outside the US, and specifically defines television as *commercial* television.

² For an overview of audience studies, including discussion of children as a 'vulnerable audience', see (Ang, I. 1991; Livingstone, S. 2003; Nightingale, V. 1993, 1996).

³ Derived from structuralist linguistics, semiotics treats communication 'messages' such as television content as if they were languages. Literate readers/viewers have competence in conventions of television, and thus are able to decode/produce meaning from texts (Hall, S. 1993 [1974]).

⁴ The Australian Children's Television Foundation has typically included positive depictions of people and children with disabilities in its programs, and authors and markets teaching resource material for schools in line with the kind of prosocial goals recommended in the UK study (Australian Children's Television Foundation 2007).

⁵ Desensitisation is a behavioural therapy used in the treatment of phobias or anxiety disorders. In simple terms, it involves exposing the patient to the fear-inducing stimulus, initially at a very low level, so that it can be tolerated. The level of exposure is gradually increased, so that the patient becomes less 'sensitive' to the stimulus at a level it would be encountered in everyday situations; e.g. a child who had been frightened by spiders in a movie might be exposed to a toy spider, initially, or a cuddly animated version, then progressively introduced to more naturalistic representations.

⁶ See the discussion of cross-sectional studies in Chapter 2.

⁷ Meta-analysis is a statistical method for summarising findings from many studies that have investigated a similar problem. 'The method provides a numerical way of assessing and comparing the magnitudes of "average" results, known as *effect size* (ES)—expressed in standard deviation (SD) units. An *effect size* is calculated as the difference in performance between the average scores of a group in a trial or experimental condition and those in a comparison condition, divided by the SD of the comparison group (or more often, divided by the pooled SD of both groups)' (Rowe, K. 2006). An *effect size* ≤ 0.3 is regarded as weaker; ≥ 0.8 as 'strong'. In between these lie 'moderate' effects.

⁸ For those interested in the statistical data, Paik and Comstock's examination of cross-sectional surveys showed a positive correlation between television violence and aggressive behaviour, with an average significant effect size of .19. A similar effect size was found for tests in which aggressive behaviour was defined only as physical behaviour ($r = .20$). Their meta-analysis of experimental studies found significant effect for the influence of television on subsequent general aggressive behaviours ($r = .38$) and specific physical violence ($r = .32$). These are considered to be 'moderate sized' effects, as explained in a previous note.

⁹ A longitudinal study involves observations of the same variable (e.g. an individual person in a cohort study) over a long period of time, often many decades. Unlike cross-sectional studies of populations, longitudinal studies track the same people, and therefore any differences observed in those individuals are less likely to be the result of factors such as cultural differences across generations. Types of longitudinal studies include cohort studies and panel studies. Cohort studies sample a cohort (i.e. a group experiencing some event, such as birth, in a selected time period) and survey them at intervals through time. Panel studies sample a cross-section and survey it at regular intervals.

¹⁰ They found an average effect of .17—although this is lower than for some of the experimental and correlation data, it remains significant.

¹¹ These findings are supported by recent research on message attention and information processing in the context of multiple-message environments (popularly called 'multitasking'). Research shows that, while we can perceive two stimuli in parallel, we cannot process them simultaneously. A number of dual-attention studies have demonstrated that users 'cannot attend to and process simultaneously multiple non-related messages' (Foehr, U. 2006). There are newer studies documenting the detrimental effects of having the television on while performing other 'cognitively demanding' tasks such as reading or homework. For a summary of these, see Foehr (2006).

5 Radio and music media

Radio: usage and access conditions

Radio has not, as some feared, been replaced by screen-based media, nor has it ceased to be a source of music content, but users are increasingly accessing music through new media platforms and services.

Trends in the UK show a growth of radio reach in children in the 4–14 years age group (90.1 per cent, up 5.1 per cent since 2004), with a decline in reach in the 15–34 years age group. Analysts attribute this shift to the availability on digital platforms of branded and specialist content channels that are appealing to youth. The BBC's Radio Player streams live from its radio networks—20 million hours of listening—and users also access the 'listen again on the web' function, time-shifting their access to radio broadcasts—12 million demands per month (Ofcom 2006).

In the UK analog sector, local radio has lost share in preference to national commercial radio and digital radio services. In addition to using an analog radio set, a user can access radio content with a digital audio broadcasting (DAB) set and digital radio services through a TV set, a computer or mobile device. Internet radio and podcasting are also growing in popularity. Radio audience listening peaks at breakfast time and the home is the main listening location (Ofcom 2006). Qualitative research from the UK depicts a medium typically used as a secondary activity, in the background, accompanying many daily routines, often enjoyed by children in the privacy of their own rooms (Livingstone, S. 2002; Mackay, H. & Ivey, D. 2004; Millwood Hargrave, A. & Livingstone, S. 2006). This is supported by large-scale US surveys (Roberts, D., Foehr, U. & Rideout, V. 2005).

A recent presentation by Commercial Radio Australia states that, while 22 per cent of Australians aged more than 14 years own an MP3 player, only 27 per cent of these have ever downloaded a podcast, and commercial radio remains an important source of new music. It reports that Australians spend almost three hours per day with commercial radio. However, the data reported does not include information about Australians aged less than 18 years. The report acknowledges that radio share remains strongest in older demographics. More than 50 per cent of those surveyed report having listened to radio using their mobile phone (Commercial Radio Australia 2006).

In the US, the Kaiser Family Foundation's *Generation M* survey compared findings from 2005 with their previous study undertaken five years earlier. They found that, only radio breaks the pattern of steady increase in media availability. While the proportion of households with at least one radio set remained roughly constant, there was a 10 per cent decrease in the proportion of households owning three or more radios. In addition, the proportion of young people owning their own radio set decreased by two per cent. This is also attributed to trends among young people to access music using new platforms and devices (Roberts, D. et al. 1999; Roberts, D., Foehr, U. & Rideout, V. 2005).

AGE AND GENDER DIFFERENCES IN LISTENING

Not surprisingly, the *Generation M* survey finds that music media grow in importance as children grow older. On any given day, 74 per cent of children aged 8–10 years, 87 per cent of 11–14 year-olds and 90 per cent of 15–18 year-olds spend time with audio media such as radio or CDs/tapes/MP3s, with 60 per cent of the older children spending more than an hour per day listening. Gender also locates substantial differences in likelihood and extent of consumption of music media, with girls listening for an average of 31 minutes per day more than boys (Roberts, D., Foehr, U. & Rideout, V. 2005). Livingstone also identifies age and gender differences in audio consumption. ‘Music lovers’ are among the specialised media styles she classifies among 15–17 year-olds, with a higher proportion of girls and working-class children in this group. These ‘music specialists’ are also heavy consumers of print media—magazines, newspapers and comic books, rather than books (Livingstone, S. 2002).

AUSTRALIAN RESEARCH – NEW MEDIA AND RADIO

Australian research has also documented trends in the youth market towards an increased consumption of internet radio and live streaming of music. Kibby’s autoethnographic study, reported in ‘Y!Music Web Radio’, explores the customisation of content available, including shopping and fan community options. She says, ‘web radio listeners have the benefit of an abundance of content, but also the task of locating those stations which mesh with their taste or mood’. Yahoo’s service, which her study examines, ‘sells’ its customisation service as well as content, allowing users to customise a station of their own based on a system of rating of their favourite genres’. In this, she supports Bruns’ insight that ‘online radio allows listeners to swap local radio for more exotic programming ... offer[ing] a large variety of special interest Webcasts catering to very genre-specific tastes’ (Bruns, A. 2003).

Kibby also finds that, while audio streaming yields choice and new pleasures, it has threshold difficulties for users. She found that the ‘music rating algorithm’ used by Y!Music was difficult and time-consuming to use. Setting up a personal station that ‘listens to me’ proved frustrating for some users. (Kibby, M. 2006). Another Australian study explored the early development of the Youth Internet Radio Network, arguing that new media participation provides an effective tool for encouraging creative literacies among young people (Notley, T. & Tacchi, J. 2004).

Influences of radio

As Millwood Hargrave and Livingstone point out in their recent review of research (2006), the academic literature on radio is sparse. Most studies deal with the political economy of radio production and distribution (Hendy, D. 2000; Potts, J. 1989). Audience research primarily looks at the social and cultural place of radio in everyday life (Foxwell, K. 2001; Hargreaves, D. & North, A. 1999; Mackay, H. & Ivey, D. 2004; Millwood Hargrave, A. 2000, 2002). In addition, regulatory institutions have examined radio and its relation to public attitudes and tastes (Australian Broadcasting Authority 2000, 2003; Foxwell, K. 2001; Hendy, D. 2000; Millwood Hargrave, A. 2000, 2002).

REALITY-DEFINING EFFECTS

Hendy (2000) reviews research from the 1990s, finding that increasing niche segmentation in radio ‘ensures a diet of familiar and reassuring aural experiences to audience subgroups’, rather than cultivation a common experience, and notes the standardisation of commercial output designed to minimise commercial risk at the expense of diversity. Most attention on harmful influences has focused on music lyrics, discussed below, or on the conservative influence of talk-back radio programs, particularly the ‘shock jock’ genre (Australian Broadcasting Authority 2000; Masters, C. 2006; Millwood Hargrave, A. & Livingstone, S. 2006). However, discussion of talk-back radio influences, does not assume any direct application to children and young people. In their earlier, nationally-representative study, *kids & media @ the new millennium*, Kaiser Family Foundation researchers (Roberts, D. et al. 1999) demonstrated that, while children spend a few minutes per day listening to news and talkback radio, and younger children listen to recorded stories, audio media are for the most part synonymous with music media for children.

Music media and content

As discussed above, much radio listening is motivated by desire for music content. The *Generation M* study surveyed content preferences in the US of 12–17 year-olds who listened to tapes, CDs, radio and/or MP3 players. Rap/hip hop music accounted for most of adolescent music listening on any given day (65 per cent), followed by alternative rock (32 per cent), hard rock/heavy metal (27 per cent) and ska/punk (23 per cent). Race and ethnicity influenced content choices, with white teens spreading their listening across a broader range of content types. Rap/hip hop was the clear preference of all demographics and gender showed few differences in tastes (Roberts, D., Foehr, U. & Rideout, V. 2005).

CONTENT ANALYSES

The body of research evidence about music is small by comparison with that for television, and is largely divided between televised music videos and music played on the radio, with scant attention to other platforms. Studies have examined a range of popular music genres. The major focus of research is on song lyrics, with little attention having been paid to musical elements. There is growing interest in visual portrayals in music videos (Millwood Hargrave, A. & Livingstone, S. 2006).

Millwood Hargrave and Livingstone (2006) review a series of content analyses of popular music lyrics undertaken in recent years. They report that findings are generally consistent in showing that music is a key source of messages regarding alcohol, tobacco, sexuality, sex-role stereotyping and violence for their teenage audience (citing Gerbner, G. 2001). Studies show that African Americans are disproportionately represented among those shown to smoke and drink. Listening to music media, particularly exposure to music videos, has been correlated with early uptake of sexual activity (Brown, J.D. et al. 2006; Pardun, C., L'Engle, K. & Brown, J.D. 2005). Borzekowski et al. (2000) found that, among all screen genres examined, only time spent watching music videos is associated with concerns about body image and weight among teenage girls. However, after controlling for BMI (body mass index) and ethnicity it is suggested that health and cultural factors may, in fact, be influencing these concerns as well as choice of screen entertainment leisure options (Borzekowski, D., Robinson, T. & Killen, J. 2000).¹

Violence and sexual violence

Millwood Hargrave and Livingstone (2006) also review recent content analyses of music videos. (As discussed elsewhere in the current review, ‘cultivation’ and ‘general aggression’ theories are the usual rationale for positing a connection between sexual and violent media content and influences).

Martin et al. demonstrate that a considerable proportion of music videos contain violence (Martin, B. & Collins, B. 2002), while another study uses data from the influential American *National Television Violence Study* to argue that 53 per cent of music video programs and 15 per cent of individual music videos feature violence (Smith, S. & Boyson, A. 2002). The latter study also notes that the portrayal of violence in these media has precisely the elements found by previous research on violence to increase effects—realistic settings, little representation of empathy with the suffering of the victim, violent actions left unpunished, or are committed by celebrity or heroic figures. Racial differences are found to be located by genre, with rap videos featuring more violence, usually involving black perpetrators and victims. Rock videos tend to feature mostly white perpetrators and victims (Smith, S. & Boyson, A. 2002).

Studies consistently find that music media used by teenagers contains a high proportion of sexual content, though consistent with levels found for other media (Brown, J.D. 2002; Brown, J.D. et al. 2006; Gruber, E. & Thau, H. 2003; Pardun, C. 2002; Pardun, C., L’Engle, K. & Brown, J.D. 2005; Steele, J. 1999). Flood and Hamilton’s review of research on youth and pornography in Australia also posits a link between sexual content of music media legally available to children with attitudes, knowledge and behaviour. They note US research, including Thornburgh and Lin’s longitudinal study, which found no ‘strong or consistent’ evidence of links between amount of sexual content in media (including music videos) and initiation of sexual activity (Huston, A.C., Wartella, E. & Donnerstein, E. 1998; Thornburgh, D. & Lin, H. 2002). They point out that it is ‘only a set of ethical, moral or political values which allows us to determine’ whether effects attributable to sexual media are positive, negative or neutral, as:

moral conservatives may judge women’s premarital sex as negative given their belief in the desirability of sex only within marriage, while advocates of comprehensive sexuality education may be more concerned with whether this sex was consenting and safe or coerced and risky ... Australian advocates of sexuality education are less concerned with earlier or premarital sex per se, and more with minimisation of the potential harms ... which may accompany sexual activity (Flood, M. & Hamilton, C. 2003b).²

OFFENSIVE LYRICS

In the context of their brief to examine ‘offence’ and well as research on harm, Millwood Hargrave and Livingstone (2006) examine claims that rap/hip hop music contains ‘violent, racist and/or homophobic lyrics’, noting that the empirical research base is limited. One study found that lyrics are perceived to be more violent if attributed to rap/hip hop than to country music; this finding casts some doubt on the coding process in analyses of this genre. Other studies argue that rap/hip hop can be read or received as transgressive, giving voice to marginalised groups (Fried, C. 1999; Millwood Hargrave, A. & Livingstone, S. 2006; Ogbar, J. 1999). Similarly, Richardson and Scott argue that rap/hip hop can be seen as a ‘metaphorical offspring of America’s well-established culture of violence’, a scapegoat for the social factors which contribute to the alienation of youth (Millwood Hargrave, A. & Livingstone, S. 2006; Richardson, J. & Scott, K. 2002).

British music industry commentary also resists scapegoating the audio media content, pointing to voluntary labelling of content for parental guidance purposes, and arguing that rap/hip hop lyrics reflect existing social problems rather than instigating them, and that the music industry should not be held responsible (British Phonographic Industry website, www.bpi.co.uk/) cited in Millwood Hargrave and Livingstone (2006).

Adolescent identity and cultural production

Radio and music media have been examined as to their role in shaping aspects of musical taste (Hendy, 2000), and in constructing the public's understanding of national culture and identity. Potts argues for the importance of radio in normalising Australian accents and women's voices in media (1989). From a cultural studies, sociological or cultural geographic perspective, a number of other Australian and international studies have examined the role of music in constructing the population's understanding of their national culture and identity, and of youth subcultural and peer identities (Abramson, B. 2002; Bennett, T. et al. 1993; Christenson, P. & Roberts, D. 1998; Frith, S. 1990; Hayward, P. 1993; Kibby, M. 1999; McClary, S. 1994; McGregor, C. 1993; Skelton, T. & Valentine, G. 1998).

Recent qualitative studies have examined the use of music media in the construction of adolescent identity, together with the importance of youth-generated cultural production and creativity. In her cross-cultural ethnography of adolescent girls, Gerry Bloustien shows the importance of music production and listening in the everyday lives of girls from a range of socioeconomic and cultural backgrounds, including indigenous cultures. She finds that the resultant social identities are always to some degree extensions of the parent cultures and wider social networks, not merely youth music 'subcultures' (Bloustien, G. 2003). Mazzarella examines fan production surrounding music media and celebrity culture as 'productivity and participation', acquisition of social capital through knowledge acquisition, demonstration of social status through aficionado 'performance', and production of sexual identity through image and textual circulation within the (online) community (Mazzarella, S. 2005).

Another recent book examines how music interacts with young people's everyday lives. Drawing on interviews with and observations of youth groups, together with archival research, the study explores young people's enactment of music tastes and performances, and how these are articulated through narratives and literacies (Laughey, D. 2006).

Digital sharing: community and risks

Distribution contexts have been an important theme in discussions of music media. The successful litigation against the Napster file-sharing software and database service drew the public's attention to the widespread practice of sharing MP3 files over the internet (Rimmer, M. 2001).³ A music industry litigation campaign against the P2P (peer-to-peer) industry players that succeeded Napster resulted in a climate in which the resulting threat of prosecution became a known risk (Richardson, M. 2002). In the aftermath of these events, legal and cultural studies research examined the growth and implications of the P2P file-sharing practices (Jones, S. 2002; Kibby, M. 2003) and the emergence of legal online distribution as a new industry practice (Anderson, Chris 2004, 2006; Bond, J. 2004). Recent consumer uptake of new pay services, such as iTunes, together with industry marketing tactics have also been discussed, primarily in industry publications (Bruno, A. 2006; Walsh, G. et al. 2003).

File-sharing networks have been discussed as types of online community. Napster at its height, through the incorporation of chat rooms in the software interface, provided opportunities for what could be termed ‘communities of interest’ that were international and decentralised, linked by the software and by an interest in exchanging and discussing different kinds of music with like-minded individuals. Rimmer provides an interesting inflection of this argument by suggesting that, for some users, just the fact of being able to copy and disseminate music was itself a powerful interest (Rimmer, M. 2001).

MP3 blogs have also been discussed in this light, as music review sites, sources of information about eclectic music tastes, as well as places where music files can be exchanged (Fitzgerald, B. & O'Brien, D. 2005). Other research has examined the social benefits of online and offline communities in sharing knowledge about, and access to, music and other creative media, including the artist and user-led developments of new regimes of intellectual property, such as Creative Commons (Fitzgerald, B. & Oi, I. 2004).

Intellectual property issues have also been touched on by Australian researchers in the context of studies of new forms of user-generated creativity around music and new music media; for example, ‘mashups’ (McAven, E. 2006), and/or creative ‘sampling’ of copyright content which is then published on websites, or as part of blogs or video productions on portals such as YouTube (Charman, S. & Holloway, M. 2006).

Summary

Studies indicate that screen-based media have not displaced radio, but children and adults are increasingly accessing music through new media platforms and services. There are important gender and cultural differences in music preferences and the amount of time devoted to music listening.

Researchers have argued that music media are a key source for construction of adolescent identity, a focus for social networking, and an important facet of cultural production for young people.

While music lyrics have come under scrutiny for their sexual or offensive content, there is only weak evidence that the amount of sexual content in music videos or song lyrics causes initiation of sexual activity.

There are risks of prosecution associated with illegal file-sharing. However, there has been a trend towards increasing promotion and uptake of legal distribution services.

¹ For further discussion of sexual content, body image and substance abuse in music and other media, together with a more detailed discussion of the recent medical research, see Chapter 11.

² For a discussion of the health risks associated with early sexual debut, see Chapter 11.

³ Developed by a 19-year-old university student in 1999, the Napster file-sharing program and database developed into a network of more than 38 million music fans who exchanged MP3 music files with each other for no cost. The Recording Industry Association of America (RIAA) and several individual artists successfully prosecuted Napster for copyright infringement, on the grounds that it helped its users to exchange illegal MP3 files (Eliezer 2001; Richardson 2002). While not all Napster users were young people, it is clear that at least some minors were included in the legal threat involved.

6 Film, video and DVD

While film, video and DVD lie outside ACMA's jurisdiction, as media classified by and falling under the regulatory jurisdiction of the Office of Film and Literature Classification (OFLC), technological 'convergence' means that much of this content can now be accessed through new media platforms and services that are regulated by ACMA.

In addition, research on these media often explores similar thematic concerns and employs similar approaches to television. The research findings have many elements in common with those for other screen media. In particular, findings regarding the broader range of content available through the internet are foreshadowed by the range of restricted categories of material (sexual and violent content) accessible on film and in video/digital video formats. The contexts of media access, therefore, are a more important theme in this literature than in that relating to terrestrial broadcast television.

To provide balance to the research review, an overview of the recent literature on these media is provided here. The starting point is the findings of the broad-ranging review of the research literature on film, video and DVD undertaken on behalf of Ofcom, the UK broadcast regulator, by Millwood Hargrave and Livingstone (2006).

Approaches and theoretical issues

Much research has concerned pornography, which we deal with in more detail in our chapter on the internet, and sexualised violence. Given the more 'private' and 'optional' contexts involved in access ('pull' content), as opposed to the one-way communication 'pipe' of broadcast television ('push' content), academic debate concerning the philosophical, legal and regulatory implications of the empirical research on pornography has formed part of the discussion. This debate canvasses libertarian issues of freedom of expression and human rights, as well as feminist debates over the political and ethical status of pornography. As the UK reviewers note, 'the research has encompassed adult as well as child audiences, both because concerns about harm have been raised for all age groups and partly because young adults (typically college students) are often used in research as a proxy for teenagers, for reasons of research ethics' (Hylmo, A. 2005; Millwood Hargrave, A. & Livingstone, S. 2006).

Reality-defining effects

The primary research interest has been the role of film in cultivating gender and ethnic stereotypes. Content analysis has been the favoured research methodology rather than qualitative studies of audiences. Hylmo's analysis of a selection of movies released in the US between 2000 and 2004 examined messages about the role and function of organisations and women's roles within them, concluding that many films present messages that reinforce traditional stereotypes, while others may provoke self-reflection about gender roles (Funk, J. et al. 2004; Millwood Hargrave, A. & Livingstone, S. 2006).

Quantitative US research suggests that the mass media serve as a kind of 'super peer' for girls who enter puberty in advance of others of their own age. A survey of teens found that early-maturing girls reported more interest in accessing sexual content in the media than late-maturing girls. The survey finds greater use of a range of media—including R-rated movies, music and magazines featuring sexual content—among early maturing girls, and also finds that they more readily interpret media messages as endorsing teenage sexual intercourse, and portraying sexual behaviour as normative and risk free (Brown, B., Geelhoed, E. & Sellen, A.

2001; Brown, J.D. 2002; Brown, J.D. et al. 2006). Other studies suggest that the associations between teenagers' sexual media 'diet' and their attitudes towards sexual behaviour are more strongly affected by exposure to movies and music with sexual content than by other media, such as magazines (Pardun, C. 2002; Pardun, C., L'Engle, K. & Brown, J.D. 2005).

Children's emotional responses to film and other screen media

As canvassed in our chapter on television, there is a large body of research on children's fright responses to film, DVD, television and news media.

The most important of the US research was conducted over many years by Joanne Cantor and her colleagues (Cantor, J. 2001, 2002; Cantor, J., Wilson, B. & Hoffner, C. 1986; Harrison, K. & Cantor, J. 1999; Valkenburg, P., Cantor, J. & Peeters, A. 2000). While the research documents cases of children experiencing intense fear lasting from days to years, engendering sleep disturbances,¹ and requiring, in extreme cases, professional desensitisation and counter-conditioning therapy, these are not indicated as the norm. Most fears are of a milder kind and can be dealt with by parental strategies (Cantor, J. 2001).

While conceding that media fright responses are genuine, particularly in younger children, and that parental regulation is called for, Buckingham argues that stress and fear are a normal part of childhood experience (Buckingham, D. 1996). Operating from more of a cultural studies perspective, his qualitative work privileges the agency of children as cognitively active in dealing with media fears. He points out that predicting what individual children will find upsetting or fear-inducing is problematic because emotional reactions vary considerably with age, content genres, children's developing media literacy and family context (Buckingham, D. 1996).

There are developmental differences involved in determining what children will find frightening, being dependent in part on the child's ability to make 'modality' judgments—to discriminate between fantasy and reality in program and life content. Younger children are susceptible to fear of the grotesque, supernatural and physical 'monstrosity' or 'strangeness' of characters and imagery (such as found in horror and animation). Older children are more subject to abstract fears, such as the likelihood of war—such as found in news media (Cantor, J. 2001, 2002; Cantor, J., Wilson, B. & Hoffner, C. 1986; Davies, M. 1997; Millwood Hargrave, A. 2003; Valkenburg, P. 2004; Valkenburg, P. & Vroone, M. 2004).

Research on more mature audiences has also examined the fascination of teens, especially girls, with horror and 'slasher' movies. Theories of vicarious coping and playful interaction with taboo experiences are discussed (Hill, A. 1997; Jerslev, A. 2001; Millwood Hargrave, A. & Livingstone, S. 2006). The pleasures of horror are also discussed by Buckingham (1996); see also (Jarvis, C. 2001; Karlyn, K. 2003; Turnbull, S. 2003).

Pornography

Millwood Hargrave and Livingstone note that arguments 'that pornography is harmful come from diverse perspectives, including religious/moral objections that it corrupts societal values, feminist objections that it is in itself a form of sexual violence because it objectifies women and/or that it encourages male violence against women, and child welfare concerns that it harms children's sexual and emotional development' (2006). They also note that establishing whether or not pornography is harmful to children is difficult for researchers given ethical restrictions on conducting empirical research involving the subject group (Malamuth, N. & Huppin, M. 2005).

The UK reviewers further report that exposure to pornography seems to be widespread among young people, quoting an Australian survey in which 73 per cent of 16–17 year-old boys (and 11 per cent of girls) reported having seen at least one X-rated film (films featuring depictions of actual sexual intercourse) and a small minority reported watching them regularly (Flood, M. 2007; Flood, M. & Hamilton, C. 2003a, 2003b). Further, 84 per cent of respondents believed that watching such videos is widespread among boys, and this is attributed to peer group pressure (Millwood Hargrave, A. & Livingstone, S. 2006).

Flood and Hamilton's report on youth and pornography in Australia reviews evidence for likely effects of exposure and argues that, while pornography is not the sole determinant of men's violence against women, in that personal, situational and sociocultural factors also exerted influences, there is an association between the use of pornography and sexual aggression. Although pornography is not the only source of sexist and violent-supportive representation and discourses, it is more likely to be harmful for males who identify with traditional images of masculinity and gender role privilege, have hostile sexual attitudes towards women, see violence as manly and desirable and are attracted to male peers who legitimate abuse of women (Flood, M. & Hamilton, C. 2003b; see also Malamuth, N. & Huppin, M. 2005).

FEMINIST ARGUMENTS FOR HARMS/BENEFITS FROM PORNOGRAPHY

Catherine Itzin (2002) suggests that there are several categories of victims of pornography, including actors and producers, male consumers, society in general, and children in particular. She argues that pornography harms those women and children involved in its production, and links circulation of this kind of discourse with the global trade and traffic in women and children. Millwood Hargrave and Livingstone comment that 'the UK legal framework makes the possession of child abuse images illegal precisely because possession is deemed to increase the demand for, and hence the production of, content which, generally, requires the commission of a crime; it could be suggested that the same argument applies to the possession (or viewing) of pornography portraying adults insofar as this creates a demand for content which may both portray abuse or violence to women and which may stimulate illegal traffic in or degrading treatment of the women portrayed' (2006).

Barwick also reviews feminist arguments for the negative effects of sexual explicit videos in a report for the New Zealand Office of Film and Literature Classification, arguing that the feminist position on sexually explicit material is 'not an homogenous one'. She identifies a disjunction between arguments by the 'majority of feminists' that the 'sexual subordination of women' in sexually explicit content endorses and encourages the social and sexual subordination of women in society' and other strands of feminist theory which claim that pornography can be an 'enjoyable, erotic and liberating experience for women' (Barwick, H. 2003).

Atkinson makes a case linking consumption of pornographic material to a culture of 'violence against Aboriginal women' (Atkinson, J. 1990; Australian Associated Press 2006). She refers the authors of the current review to submissions to the Royal Commission into Aboriginal Deaths in Custody, which links pornography with other social and cultural determinants to the development of hostile living environments for women and children (Miller, B. 1990). Duncan's paper to the Forum on Child Sexual Assault in Aboriginal Communities also cites access to pornography as a contributing factor to the dynamics of child sexual assault (Duncan, M. 2006).

While Indigenous feminists and child advocates have drawn attention to the existence of sexual violence against women and children in communities (Duncan, M. 2006; Keel, M. 2004; Shaw, W. 2003), and it has been canvassed recently and controversially in the press (Atkinson, J. 1990; Nowra, L. 2007; Pearson, C. 2007; Windshuttle, K. 2006), empirical examination of this phenomenon by researchers, including the role if any played by pornography, has been hampered by the political sensitivity of the issue.²

‘Third Wave feminism’ has exhibited a less suspicious relationship with popular culture and erotic narrative/pornography. As Karlyn argues, sexuality has become a battleground for ‘democratic’ aspirations among contemporary feminists, in ‘much the same way that Civil Rights and Vietnam mobilized their mothers’, with mothers, ‘even feminist mothers’, teaching their daughters about the ‘need to police their own sexuality’ (2003). Anxiety about young women and popular culture, she argues, arises from representations of teenage girls’ sexuality in ‘movies, MTV, magazines, advertisements, clothing, TV shows’:

As a result, Third Wavers focus their attention on sexual politics as well as cultural production, viewing society’s ‘construction, containment, and exploitation of female sexuality in the 1990s . . . as a ‘model for women's situation generally, particularly in terms of agency or victimization’, two of the key topics of debate among the ‘popular’ feminists’ (Karlyn, K. 2003; Maglin, N. & Perry, D. 1996 cited by Karlyn).³

HARM TO FAMILIES AND SOCIETY

Millwood Hargrave and Livingstone examine claims that pornography harms society by ‘normalising and mainstreaming misogyny through the pervasiveness of pornographic imagery (which may also be violent, racist, dehumanising, paedophilic, . . .)’ (2006). They discuss arguments that ‘we are witnessing a trend for what was once hard-core to become soft-core, there being . . . a continuum in cultural representation between the shaved and beribboned “little girl” look of top shelf magazines and child pornography, and between the sadism of *American Psycho* and hard-core videos’ (Itzin, C. 2000, 2002). Their review also reports on quantitative and qualitative social research, including:

- a study of Canadian teens aged 14–19 in which focus groups were asked to talk about dating relationships, which found that violence was a common theme in their discussions of relationships, including conceptions of ‘consensual violence’ in which teens attribute part of the responsibility to victims, and they attributed conceptions of sexual relationships to factors including peer influence and pornography (Lavoie, F., Robitaille, L. & Herbert, M. 2000); and
- Swedish surveys of young people visiting family planning clinics, where researchers found that one third of young women and half of young men believed that pornography had influenced their sexual conduct (Rogala, C. & Tyden, T. 2003; Tyden, T. & Rogala, C. 2004).

Commenting on the difficulty of ascertaining the long-term effects of pornography on society, the UK review notes the widespread sexualisation of girls across the media (for other Australian studies, see Rush, E. & La Nauze, A. 2006; Rutherford, L. 1999), although these corporate examples are not classified as pornographic. They also examine arguments made on the grounds of ‘freedom of speech’ and the ‘liberal or even radical defence of pornography, in terms of its aesthetic merits, its political implications or, more simply, the pleasure of its viewers’. In summary, the UK review agrees with Allen (2001) who ‘simultaneously recogni[ses] but qualif[ies] this position, acknowledging the material realities of the production and consumption of pornography’:

Insofar as pornography is empowering, it is a possible site for resistance, but insofar as the genre is structured to a large extent by relations of masculine dominance and feminine subordination, it is also a possible site of the application and articulation of oppression (Allen, A. 2001; Millwood Hargrave, A. & Livingstone, S. 2006).

CHILDREN'S EXPOSURE TO PORNOGRAPHY

There is little research examining the direct effects of exposure of children to film and video pornography, largely due to ethical considerations (Helsper, E. 2005; Thornburgh, D. & Lin, H. 2002).

A recent review on behalf of Ofcom of the effects on minors of R18 material (material classified as not suitable for persons under 18), found only a small number of studies that contained empirical information on minors, much of that retrospective (for example, interviewing sex offenders about their exposure to pornographic media in youth) (Helsper, E. 2005; Millwood Hargrave, A. & Livingstone, S. 2006). Helsper cites US research, which argues that sexual material influences the moral development of young people under the age of 18, positing that exposure to pornography may influence children's optimism about marriage, alter their assessment of sex-related risks and encourage them to become sexually active at a younger age (Brown, J.D. et al. 2006; Zillmann, D. 2000). However, after reviewing the available literature, Helsper concludes that 'there is no conclusive empirical evidence for a causal relationship between exposure to R18 material and impairment of the mental, physical or moral development of minors'.

An earlier report commissioned by the British Board of Film Classification (BBFC) canvassed the views of child psychiatrists, clinical psychologists, family therapists, social workers and teachers on whether viewing pornography caused harm to children—harm in this context being defined as immediate shock and trauma, sexualisation and possible re-enactment, and broader effects on perceptions of sexuality and relationships. Most felt that viewing was harmful to some degree, though all considered that the risk was greatest to already-vulnerable children (Cragg, A. 2000; Millwood Hargrave, A. 2000).

Millwood Hargrave and Livingstone also examine more liberal arguments, such as that of Levine (2002), who proposes that 'protecting' children from positive images of sexuality poses great threats to development. US and Australian studies on teenagers' sexual development have also argued against limitation of sexual material. Prohibitionist discourse is seen to carry connotations of 'policing' or distrust of normal sexual desire and emotions, which is detrimental to young women's sense of sexual identity (Kibby, M. 2001; Tolman, D. 1994).

Violence and violent sexual content

Millwood Hargrave and Livingstone review the literature examining the effects of film violence on viewers. In a recent American survey, Funk et al. found that 9–10 year-old children exposed to more film violence had more pro-violent attitudes (Funk, J. et al. 2004).

British social scientist, Guy Cumberbatch (2004) reviewed the evidence for harm resulting from violent videos on behalf of a British video industry body. He concluded that, although the majority of reviews of the empirical literature find that exposure to video violence has harmful effects, nonetheless the evidence is unconvincing. Cumberbatch deploys the same criticisms of 'ecological validity' of the US experimental research that he mobilises in his rebuttal of game violence effects research (Cumberbatch, G. 2000)⁴.

Unlike television and games, research on violence in film is primarily concerned with sexual violence, including pornographic violence and violence against women (Millwood Hargrave, A. & Livingstone, S. 2006), the majority of studies focusing on the ‘cultivation’ of male attitudes to women. Repeated viewing of sexually violent films is said to desensitise viewers to violence against women. In an early US experiment, Linz et al. showed young men five slasher films over a two-week period, finding that after each film screening the men considered the material less violent or degrading to women (Linz, D., Donnerstein, E. & Penrod, S. 1988). Similar results were found in a later study in which exposure to sexually violent films influenced male viewers’ judgments of domestic violence victims (Mullin, C. & Linz, D. 1995).

Millwood Hargrave and Livingstone review research that finds that there are both positive and negative effects derived from viewing from pornographic film and video content. The positive effects examined in the literature include catharsis—lowering individuals’ drive to sex crimes (Helsper, E. 2005). Negative effects found include addiction to pornography, deviant or criminal sexual behaviour, aggression and negative attitudes towards women (Helsper, E. 2005). Most reviews concerning effects on adults conclude that it is explicitly violent sexual pornography (rather than consensual images of sex) that is problematic, increasing aggression and negative attitudes towards women, and desensitising male viewers to sexual violence towards women (Helsper, E. 2005; Villani, S. 2001). This leads some studies to identify violence rather than sexual content as the harmful element (Millwood Hargrave, A. & Livingstone, S. 2006).

RISK FACTORS

Following Browne and Pennell (Browne, K. & Pennell, A. 2000; Pennell, A. & Browne, K. 1999), Millwood Hargrave and Livingstone argue that ‘the evidence of a link between violent media entertainment and violence may vary in strength depending on the vulnerability of the audience’. Individual, contextual, cultural and psychological differences mediate responses to media content, rendering some people more or less ‘vulnerable’ to harmful effects (Millwood Hargrave, A. & Livingstone, S. 2006). They note that, for many researchers, these ‘risk factors’ help to account for the variability in findings for film and other media effects.

Seto et al. (2001) conclude that ‘individuals who are already predisposed to sexually offend are the most likely to show an effect of pornography exposure and are the most likely to show the strongest effects. Men who are not predisposed are unlikely to show an effect’. They argue that, even if aroused, any effect on ‘non-offenders’ is likely to be transient because these men would not normally seek violent pornography to prime existing predispositions (see also Seto, M. & Eke, A. 2005).

Millwood Hargrave and Livingstone (2006) review a number of studies that examine the nature and role of these individual, group or sub-group differences within the population. The following high risk groups were identified.

Individuals with prior aggressive disposition

Gender and prior aggressive personality were shown to mediate the impact of media violence on subsequent perceptions of violent, interpersonal conflicts. Specifically, high trait-aggressive individuals generally displayed more callous and hostile tendencies in their perceptions of interpersonal conflicts than low trait-aggressive individuals (Kiewitz, C. & Weaver, J. 2001). Preferences for violent sexual media were shown to be positively correlated with aggressive and antisocial tendencies and negatively correlated with intelligence in a survey of 160 young male students. Storylines portraying female insatiability were reported to be particularly arousing (Bogaert, A. 2001).

Children with behavioural disorders

Grimes et al. examined the reaction of 8–12 year-old children with a diagnosed disruptive behaviour disorder to violent movie scenes. They conclude that the children process the antisocial messages in violent movies differently from children without a psychiatric disorder, warning that ‘an unabated diet of antisocial media could have harmful effects on children with a psychiatric illness’ (Grimes, T., Vernberg, E. & Cathers, T. 1997). For a further articulation of these results, see also Grimes, T. & Bergen, L. 2001, 2004.

Young offenders

Other studies have examined the case of young people who commit violent acts, finding that although their viewing habits are no different from the rest of the population, they have greater preferences for violent content and are more likely to identify with violent role models in films (Pennell, A. & Browne, K. 1999). This would support the bi-directional influence theories proposed by US research (Anderson, C. & Bushman, B. 2002; Malamuth, N. & Impett, E. 2001). In a later study, Browne and Pennell surveyed young offenders’ media use in the UK, assessing the reactions to violent videos by a group of 122 males aged 15–21. Their sample included violent offenders, non-violent offenders and a control group of non-offending students. They suggested that ‘both a history of family violence and offending behaviour are necessary preconditions for developing a significant preference for violent film action and role models’, and concluded that, while there was some evidence that young people imitate films, ‘there is no firm evidence of the extent of such copycat behaviour’ (Browne, K. & Pennell, A. 2000). The researchers noted that the in-home experience seemed to be different for violent offenders, who sometimes replayed scenes of violence time and time again. They find that the well-established link between poor social background and delinquent behaviour may be further mediated by violent media (Browne, K. & Pennell, A. 2000; Millwood Hargrave, A. & Livingstone, S. 2006).

Sexual offenders

A study of 118 sexual aggressors against women found that: ‘a sexually inappropriate family environment, use of pornography during childhood and adolescence, and deviant sexual fantasies during childhood and adolescence are related to the development of deviant sexual preferences’ (Beauregard, Lussier, & Prolux, 2004; cited in Millwood Hargrave, A. & Livingstone, S. 2006). Millwood Hargrave and Livingstone (2006) note that this supports argument that pornography is an ‘instrumental cause’ in the aetiology of sexual offending (Barwick, H. 2003; Itzin, C. 2000, 2002).

Contexts of viewing

The conditions under which screen media is viewed change the way it is experienced, and can influence its effects on its users. Cinematic viewing is assumed to be more engrossing—promoting stronger identification with the story-world due to the viewer’s experience of separation in the dark, public world of the movie theatre (Ellis, J. 1992). TV, video and DVD viewing, in contrast, may occur in the distracting yet mundane environment of home and family, though increasingly in more private, domestic spaces, such as children’s bedrooms (Livingstone, S. 2002; Millwood Hargrave, A. & Livingstone, S. 2006).

In addition, regulating the access of young people to films according to age-appropriateness of their content is also managed differently in the cinema and at home. The national film classification bodies are required to consider a work afresh for domestic sale or hire, to ensure suitability for viewing in the home⁵ with, for example, potential underage viewing taken into account. As Millwood Hargrave and Livingstone note, video and DVD formats enable freeze-frame, rewind, and frame-by-frame advance. Users are able to watch scenes out of context, in ways not possible in cinema screenings (2006). Browne and Pennell draw attention to the fact that access conditions such as the facility to fast-forward to (or away from) violent or sexually-explicit scenes may pose different risks for certain vulnerable groups (2000).

Access to restricted content at home has also been a subject of concern (Millwood Hargrave, A. & Livingstone, S. 2006). American, Canadian and British children report successfully being able to access restricted content, either by renting adult-content, viewing adult-content at home with permission of family members or without consent, or by circumventing PIN protection schemes for PPV (pay per view) material (Ofcom 2005b; Thompson, S. 2003; Thompson, S. & Skrypnek, B. 2005).

Summary

Research on film, video and DVD yields similar findings to television on topics such as 'reality-defining effects' and children's emotional responses to frightening content.

However, categories of content, notably pornography and sexually explicit material, are available to viewers on these media that are not available on television. Researchers have examined access to pornography on film, video and DVD. While many have argued that such content harms children, by endorsing violent and degrading social attitudes to women, empirical evidence for harm to children from viewing sexually explicit or pornographic content is scarce, for ethical reasons.

Researchers argue that the evidence of a link between violent media entertainment and violence may vary in strength depending on the vulnerability of the audience. Risk factors for exposure to violent and sexually violent material include behavioural disorders, prior aggressive disposition and a prior history of family violence, or of violent or sexual offending.

Conditions of viewing these media, such as the ability to watch scenes out of context, may pose increased risks for certain vulnerable groups.

¹ For a more detailed discussion of the recent medical literature on sleep disturbances, see Chapter 11.

² On the role of pornography, combined with other socio-economic and cultural 'risk factors', as a predictor of sexual aggression, see Malamuth and Huppel (2005).

³ A more populist Australian statement of the 'Third Wave' position is found in Lumby (1997).

⁴ See Chapter 7.

⁵ The Australian requirements are outlined on the (OFLC) Office of Film and Literature Classification's website at www.oflc.gov.au.

7 Games

Game studies

Within academic and industry research institutions, ‘game studies’ has emerged as a field in its own right, much like ‘film studies’. Games are variously referred to as ‘computer games’, ‘video games’, ‘electronic games’; they can be played on personal computers, with or without server-based internet access, or on TV-linked games consoles. In the UK, the generic term ‘computer games’ covers all forms, while in the US, some researchers and industry bodies draw distinctions between the fine graphic capability of video games (usually console-based) and computer games, which may include simpler forms, such as card and puzzle games. In the context of this review, the generic term ‘games’ is used unless otherwise indicated.

In the US, with its strong tradition of studying psychological effects, games have become the ‘new media’, engaging most attention among researchers specialising in children’s culture. At the same time, games have ‘come of age’ as objects of study for media and cultural studies practitioners, with the realisation that the average age of game players is now estimated by the gaming industry to be 33 years (Entertainment Software Association 2006).

Anxieties previously aired about TV, from the time of its inception as a ‘new’ media, have also been expressed about games, primarily that they: contain a large proportion of violent content (Anderson, C. & Dill, K. 2000; Bensley, L. & Van Eenwyk, J. 2001; Funk, J. 2001; Funk, J. et al. 2004); reinforce sexual, ethnic and other stereotypes (Anand, S. & Krosnick, J. 2005; Ballard, M. & Lineberger, R. 1999; Blackmon, S. 2005; Consalvo, M. 2003; Ivory, J. 2006); exert an addictive influence, compelling users away from social life and other activities (Funk, J. et al. 2006; Marshall, S., Gorely, T. & Biddle, S. 2006; Wood, R., Griffiths, M. & Parke, A. 2007), particularly sport; and displace reading, homework, and impact generally on academic performance and wellbeing (Gentile, D. & Walsh, D. 2002).

Some of these concerns are inflected differently or receive greater prominence in the research on games. Violence is discussed in the context of simulations (or virtual reality), in which desensitisation to actual violence is presumed to take place. Violent, even warlike, masculinities are said to be cultivated by extensive game-play, and gender differences are a key theme. The notion of compulsive viewing is replaced by that of ‘addiction’, related to the phenomenon of compulsive gambling. New research topics also arise from the non-linear or interactive quality of game-play, primarily themes of ‘immersion’ or ‘engagement’, and the social elements of gaming.

In the interests of currency, this review will focus on, where possible, online gaming rather than games sold or rented in tangible form. Online gaming has grown as a media practice since previous Australian reviews. However, it is important to note that the distinction is not always meaningful. The culture of game players makes little distinction—with console-based video games generating online communities of interest, as well as spin-off production in the form of electronic games sites, forums and user-generated media.

Game genres and players

Industry fact sheets classify games into best-selling ‘super genres’—action, sports, racing, shooter, fighting, adventure, strategy, role-playing, family and children’s (Entertainment Software Association 2006). Burn and Carr argue that genre is the key to how games are produced and marketed, and central to how they are evaluated by players. Surveying online gaming magazines/sites—*VideoGameReview* and *Gamespot*—they describe how the reviewing enterprise generates a complex system of classification for the purposes of evaluating different aspects of the game, from types of content (action-adventure, fantasy), types of activity (puzzle, strategy, sports), forms of participation or point of view (role-playing, first-person or tactical shooter), and forms of progress through the game (platform, levels) (Burn, A. & Carr, D. 2006a; CNET Networks Entertainment 2007; Consumer Review.com 1996-2007).

Researching the influences of online gaming on children has methodological difficulties. Accessing reliable data about which children play games, the kinds of games they select, and the kinds of additional activities, social or otherwise, they do alongside game-play is highly problematic (Buckingham, D. et al. 2005). Information is typically sourced from software developers or games industry bodies. According to the US Entertainment Software Association (2006), the most frequently played types of online games are puzzle/board/game show/trivia/card games (52 per cent), with a further nine per cent being shockwave/flash/browser-based mini games, leaving the much-hyped persistent multiplayer universe (alternatively referred to as ‘massively multiplayer online games’ or MMOGs) a poor fifth place (seven per cent). However, there is little independent research to establish how much of this gaming is by children, and in which contexts (Buckingham, D. et al. 2005).

Those few large-scale studies incorporating a significant qualitative component, and/or survey instruments designed to examine the ‘social context’ of media use, are now somewhat dated. The time differential between their field work (late 1990s) and publication has rendered their findings about such matters as preferred games/content genres, and the relative importance of various competing leisure activities, less pertinent given the rapid change in technology and internet gaming culture in the intervening 5–10 years (Facer, K. et al. 2003; Fromme, J. 2003; Livingstone, S. 2002; Livingstone, S. & Bober, M. 2004b, 2005).

Major European and US surveys of children’s and adolescents’ use of various media show a typical peak of game playing (of all kinds) from middle childhood up to early adolescence (around eight years of age to 13 or 14 years of age), tailing off during the later teenage years—although less so for boys than girls (Fromme, J. 2003; Livingstone, S. 2002; Livingstone, S. & Bober, M. 2004b, 2005; Roberts, D., Foehr, U. & Rideout, V. 2005).

Since US industry publications indicate that the vast majority (69 per cent) of game players are more than 18 years of age (Entertainment Software Association 2006), more research is needed to elucidate this ‘gap’. Although neither survey addresses this question specifically, Livingstone (2002) suggests that older teenagers spend increasing amounts of discretionary time on peer and commercialised leisure activities outside of the home; the Kaiser Family Foundation’s *Generation M* study suggests that the decline in game playing and overall screen entertainment use among 15–18 year-olds may be due to more peer-oriented communication and increased homework demands (Roberts, D., Foehr, U. & Rideout, V. 2005).

In a rare study examining differences between adult and adolescent gamers, Griffiths et al. surveyed 540 players of the fantasy role-playing game, *Everquest*—at that time, the most popular MMOG. Participants were self-selected in that they were recruited through three of the most frequented *Everquest* fan sites, with 85 per cent of all players being male and 16 per cent being adolescents (defined as persons 19 years of age or younger). The age range of adolescents was 12–19 years, with a mean age of 17 years; adult gamers yielded a mean age of 30 years. Financial thresholds account for the lower number of young people playing, since payment by credit card was required, although the study did find a higher proportion of US to non-US adolescent players. In addition, adolescent gamers were less likely to gender-swap their characters and more likely to claim that their favourite aspect of game-play was violence. However, results also showed that the social features were the most popular overall elements among both adult and adolescent players. The younger the person, the more hours per week they played, which the researchers attribute to a higher amount of discretionary leisure time for adolescents (Griffiths, M., Davies, M. & Chappell, D. 2004).

Immersion

Immersion is one of the key themes in the research literature about games. It is used to refer to deep involvement in the imaginative world (Grodal, T. 2003; Lahti, M. 2003; Murray, J.H. 1997; Ryan, M.-L. 2001) and, in a more pejorative sense, the experience of being so engrossed in the fictional world that rational and critical distance are lost, arguably leaving the player more susceptible to the influences of fictional representations, or likely to model undesirable behaviours based on those scripted into the game-play. Concerns raised about immersing experience in game-play generally centre on first-person shooter and/or simulation-type games that model conflict or fighting skills (Browne, K. & Hamilton-Giachritsis, C. 2005; Buckingham, D. 2006b; Burn, A. & Carr, D. 2006a; Grossman, D. & DeGaetano, G. 1999; Kline, S. 2000).

Games theorist Alison McMahan argues that immersion has become an ‘excessively vague, all-inclusive concept’, which can mean a player being caught up in the world of the game’s story and love of the game, and the strategy it involves at a non-story level. She notes the increasing use of the term ‘presence’ from the scientific literature on virtual reality, to indicate the ‘feeling of being there’. She argues that player ‘engagement’ is often on a different level—gaining points, demonstrating their prowess to other players. While this ‘engagement’, often referred to as ‘deep play’ by the gamers themselves, can become a near-obsessive practice for some players, the study is generally sceptical that increased ‘presence’ in video gamers can be blamed for addiction, hallucinatory trances or crimes of violence (McMahan, A. 2003). This study is, however, a theoretical analysis of the kinds of narrative and perceptual experiences available in different kinds of game-play, and does not deal specifically with children and young people. In another theoretical study, Marie-Laure Ryan argues that ‘presence’—in which users experience the text as a real place—is largely an effect of narrative, rather than interactivity. She sees literature as the archetype of immersing experience, as invoked in the popular phrase ‘lost in a good book’ (Ryan, M.-L. 2001).

Addiction

While stories in the popular media compare addiction to computer games with gambling and serious drug use (Bachl, M. 2006), the research literature is more cautious. Debates continue as to whether excessive internet use can be regarded as a disorder, some researchers arguing that inadequate diagnostic testing exists, and that the term is best reserved for substance abuse (Thurlow, C., Lengel, L. & Tomic, A. 2004).

Other studies find that there is a case for pathological or at least problematic internet and games use (Charlton, J. 2002; Griffiths, M. 1998, 2000a; Griffiths, M. & Davies, M. 2002; Widyanto, L. & Griffiths, M. 2006; Young, K. 1999; Young, K. & Rodgers, R. 1998). The research examines the possibility that some people spend excessive amounts of time and sometimes money on internet activities to the detriment of education, work and social relationships. Studies generally conclude that only a small minority of people are likely to exhibit addiction to games. The case for gambling addiction is stronger, based on arguments that this involves variable ratio reinforcement schedules (Griffiths, M. 2003a; Wallace, P. 1999).

In their study comparing adult and adolescent gamers, Griffiths et al. found that adults were more likely to report sacrificing social activities to play, while adolescents were more likely to sacrifice education or work. However, they concluded that there was insufficient data to show that adolescents were more vulnerable to addiction than adults.

Citing a distinction between non-pathological high engagement and addiction (Charlton, J. 2002), they conclude that there may be 'excessive' online gamers who, nonetheless, exhibit few negative consequences in their lives (Griffiths, M., Davies, M. & Chappell, D. 2004). Familial disagreements over family leisure time use (or space use, where a TV-linked games console is situated in the family living room) have been reported in ethnographic studies, involving husbands and wives, as well as parents and children (Mackay, H. & Ivey, D. 2004).

Violence

There is continuing debate on the extent of media violence on children and young people. Both the findings and the polarisation of research traditions around effects of violent video games are consistent with those from other media, such as television, film, music videos and DVD. The major difference discussed lies in the interactivity of games: allowing the player to both view and enact, or in some cases, simulate, violent acts and fighting strategies. Like DVD and videocassette technology, personal access to violent games media facilitates repeating the experience, and self-selecting, to some degree, elements within the 'text' (Kline, S. 2000).

As discussed in the chapter on television, there is a voluminous literature from the US psychological tradition indicating that heavy consumption of 'violent' media, including games, is positively correlated with aggressive behavioural effects.¹ While experimental studies can observe only short-term effects (usually on aggressive play, or bullying), there have been well-designed longitudinal studies that have researched the links between aggressive behaviour and violence in various media, even after controlling for other variables (such as previous aggression, childhood neglect, family income, living in violent cultures, intelligence and education, and psychiatric disorders (Huesmann, L.R. et al. 2003; Johnson, J. et al. 2002).

There have been a number of recent meta-analyses of video game research (Anderson, C. 2004; Anderson, C. & Bushman, B. 2001; Sherry, J. 2001). Anderson finds that, across a

range of methodologically strong studies, it can be shown that violent games amplify physiological arousal, aggression-related thoughts and feelings, and reduce pro-social behaviour. The effects recorded are small to medium, similar to those for film and television violence. Sherry's meta-analysis also concludes that exposure to violent games resulted in a modest effect of aggressive behaviour. Most experimental studies rely on aggressive play as the outcome indicator after using violent media (Griffiths, M. 1997, 1999; Kline, S. 2003). Like all experimental studies, they are subject to criticism on the basis of relevance to real-world situations (Cumberbatch, G. 2004; Griffiths, M. 2000b).

As discussed in relation to other media, social learning theory (Bandura, A. 1977; Bandura, A., Ross, D. & Ross, S. 1963) explains correlations between media violence and aggressive behaviour as the result of social modelling: the child, having observed certain behaviour, incorporates the modelled behaviour as a construct into play routines. Arousal and imitation thus reinforce aggressive play styles. 'Priming' is another concept used in the discussion of aggression—games violence is understood to prime aggressive cognitions and emotions that are already present in the player.

Craig Anderson, one of the pioneers of media aggression research, together with colleagues in a longstanding research program, developed an integrated 'general affective aggression model'. It proposes that individual factors, such as an aggressive personality, combined with situational factors, such as violent game-play, can combine to influence emotions (affect), such as hostility. Combined with pre-learned scripts and physiological arousal, these factors can influence the player's appraisal of their real world situation, making it more likely for them to respond aggressively in the short term. Short-term effects initiate a cycle, in which the individual self-selects more violent content, and the process continues. As in research on other media, such models propose that there is a 'bi-directional cause effect', with aggressively-disposed individuals selecting violent media, and violent media increasing aggressive scripts (Huesmann, L.R., Lagerspetz, K. & Eron, L. 1984; Malamuth, N. & Impett, E. 2001).

Given the rarity of longitudinal studies, conclusions about long-term effects are frequently deduced from the short-term effects observed in free play (see Chapter 2) and provide weaker evidence for long-term effects on children's personalities than do longitudinal studies. A report of very recent studies, together with a refinement of the general aggression model and an overview of theory and policy on effects of violent media, is in Anderson, Gentile and Buckley (2007).

An influential minority of social scientists question the relevance or strength of the findings summarised above (Cumberbatch, G. 2000, 2004; Durkin, K. & Barber, B. 2002; Goldstein, J. 1998; Griffiths, M. 1997, 2000b). The major critique of the social scientific literature linking violent games to aggression comes from media and cultural studies practitioners. This literature generally deploys some or all of the following arguments, that: audiences are active and can differentiate fantasy violence from real world situations; players make use of fantasy violence in active, cathartic or even transgressive ways; other social variables, such as poverty, poor education and neglect are much more influential in priming violence than media texts; given the many mediating variables identified by experimental researchers, the effects found are useless in a predictive sense, or too small and unpredictable to warrant curtailing either 'freedom of speech' or the operation of a lucrative industry that provides pleasurable cultural products to many (Amici Curiae 2002; Barker, M. & Petley, J. 2001; Buckingham, D. 1996, 2000; Carr, D. et al. 2006; Cumberbatch, G. 2000, 2004; Goldstein, J. 1998; Jenkins, H. 1998, 2006a; Sanford, K. & Madill, L. 2006; Scharrer, E. & Leone, R. 2006; Williams, D. & Skoric, M. 2005).

As discussed in our chapters on television and film, video/DVD, social scientists and public health researchers have recently attempted to steer a middle path between these two camps using the medical concept of the risk factor. Certain individuals or groups may be identified as more susceptible than others to the effects of violent imagery in games and media. Such content is considered as one factor to be addressed within the broader context of social variables, such as family, communities and economic structures (Browne, K. & Hamilton-Giachritsis, C. 2005; Kline, S. 2003; Olson, C. 2004). They argue that, while there is little evidence of a substantial association between exposure to violent games and serious real-life violence and crime, there is consistent evidence in the scientific literature to support claims for short-term effects on arousal, thoughts and emotions increasing the likelihood of aggressive or fearful behaviour, such as bullying or fighting.

Browne and Hamilton-Giachritsis find that young violent offenders are particularly at risk, while Kline invokes Garbarino's notion of 'developmental assets' (Garbarino, J. 2001): 'Assets are found throughout the social ecology of the child—family, school, neighbourhood and community. Among asset-rich children the impact of violence is low while among asset-poor children the rate is high ... an accumulation-of-risk model is essential if we are to understand where televised violence fits into the learning and demonstration of aggressive behavior' (Garbarino, J. 2001; cited in Kline, S. 2003).

DESENSITISATION TO VIOLENCE

The particular aspect of games as simulations of real-world fighting and strategy scenarios has also come under scrutiny. As simulation and highly graphical first or third person shooter games become more sophisticated, advocates have raised concerns by pointing out the correlations between game-play and military simulation techniques designed to desensitise soldiers to the act of killing (Funk, Jeanne et al. 2004; Grossman, D. & DeGaetano, G. 1999; Kline, S. 2000). Simulations are used in military and other types of training, as well as in therapeutic regimes for desensitising patients to fear-generating stimuli (Bartholow, B.D., Bushman, B. & Sestir, M. 2006; Griffiths, M. 2003b). Interestingly, MMOGs are being incorporated into military training, but their benefit is often projected to be in the areas of cooperative strategy, rather than breaking down the psychological barriers that prevent killing (Bonk, C. & Dennen, V. 2005; Griffiths, M. 1997).

Games and gender

As Diane Carr points out, while most game players are reputed to be male, 'most of the critical attention directed at questions of gaming and gender has focussed on girls and women' (Carr, D. 2006). Women's experience of, or supposed exclusion from, game-play and culture, she suggests, has excited more discussion than the various kinds of masculinities enacted there. Citing an industry publication (Krotoski, A. 2004), Carr points out that women play games less than their male counterparts—but not in all countries and genres. In Korea, for example, 65 per cent of gamers in 2004 were female (Krotoski, A. 2004), which suggests limitations in the popular view that all game players are teenage boys.

According to the entertainment software industry, 62 per cent of the game-playing population worldwide are male, but women aged more than 18 years (33 per cent) outnumber boys aged less than 17 years (23 per cent) (Entertainment Software Association 2006). Given the financial and other social thresholds that make a barrier to renting or purchasing games, this statistic may not indicate preference alone.

Empirical research on children and young people does suggest that there are social, developmental and gender differences in the amount of game play incorporated in children's time budgets (Fromme, J. 2003; Funk, J. et al. 2006; Livingstone, S. 2002; Roberts, D., Foehr, U. & Rideout, V. 2005). Very little difference in children's amount of play may be in evidence in middle childhood to very early adolescence, with girls appearing to be equally as interested in games (Funk, J. et al. 2006). However, by mid-late adolescence, girls have been found to prefer different entertainment and communications technologies to express sociability, while boys' interest in game playing does not seem to be subject to the same decline (Fromme, J. 2003; Funk, J. et al. 2006; Roberts, D., Foehr, U. & Rideout, V. 2005).

Some studies suggest that the difference may be as much to do with content preferences as it is about gendered ways of expressing identity and peer interaction. In their fieldwork in the mid-nineties, Fromme and colleagues found that, a decade ago, girls in the study preferred different kinds of games. Boys preferred action and fighting games (33 per cent), sport games (21 per cent) and platform games (17 per cent); girls preferred platform games (48 per cent), and think or puzzle games (20 per cent). As the researchers comment: 'Boys play more often and more regularly than girls do. This indicates different media use styles, and to some extent, different preferences ...' (Fromme, J. 2003). The *Generation M* survey found that, while boys spent three times as much time playing video games (console) as girls, with handheld games (largely platform games) the difference was only by a factor of two (Roberts, D., Foehr, U. & Rideout, V. 2005).

Differences in content preferences may be predictable by gender in later life. Some studies have argued that representational factors—the 'look' of female avatars—are partially responsible for alienating women and girls from computer games (Bryce, J. & Rutter, J. 2003; Carr, D. 2006; Cassell, J. & Jenkins, H. 1998; Consalvo, M. 2003). Others have suggested that violence, competitiveness and lack of (feminine) social interaction possibilities within game design are factors (Hartmann, T. & Klimmt, C. 2006). Newer simulation games like *The Sims 2*, and 'synthetic worlds' (Castranova, E. 2005) such as *Second Life*, have been discussed as offering more gender-neutral forms of role playing. The avatars in such environments are more able to be fully customised, while norms of social interaction can also be based on individual preferences, rather than the more circumscribed avatar roles available in fantasy role-playing games (Banks, J. 2002; Beavis, C. 2005; Griebel, T. 2006; Paulk, C. 2006; Taylor, T. 2006).

Other studies stress the importance of understanding gender and game genres in terms of the social practices of those who play the games, as well as the forms of play they offer. Catherine Beavis argues that different 'gendered' and 'orthodox' or 'transgressive' modes of play may be determined by the social situations in which playing takes place—in school, in peer settings, with same-sex or mixed-sex groups, in adult/teacher/researcher absent or present contexts. Her point is that 'playing like a girl' or 'like a child' may be different in various social contexts (Beavis, C. 2005; Carr, D. et al. 2006; see also Mackey, M. 2006; Taylor, T. 2006).

Social games

Just about every contemporary social study of gaming includes within its argument a debunking of the myth of the solitary, compulsive game player, who avoids the company of family and peers.² While children can and do use games to pass the time when other social contact is not possible, studies show that games are relevant to situations when friends are present, and that boys and male youth in particular use them in an integrated way as part of peer sociability (Ducheneaut, N. & Moore, R. 2005; Fromme, J. 2003; Gross, E. 2004; Livingstone, S. 2002). In this respect, the historical precedent is the predominantly male social space of the pinball machine and video arcade subculture, and of tabletop role-playing games like *Dungeons and Dragons* (Wolf, M. & Perron, B. 2003).

A number of recent studies have researched the highly social, cooperative strategy play offered in online fantasy role-playing games, such as *Everquest* (<http://everquest.station.sony.com/>) and *Lineage* (www.lineage.com/). These 'persistent multiplayer universes' have been researched using autoethnographic methods (Steinkuehler, C. 2004; Taylor, T. 2006), in which researchers closely describe and analyse their own experience of the game world. These studies find that exploration and social cooperation are key elements of game-play for many MMOG participants. A key element is the social category of 'guilds',³ which use player affiliation to achieve success in-game. Guilds and social aspects have also been researched using more traditional social scientific methodology and sampling techniques to analyse the functions of these affiliations both within and outside the world of the game (Ducheneaut, N. & Moore, R. 2005; Seay, A. et al. 2004; Williams, D. et al. 2006).

Statistics indicate that most MMOG players are young adults. Specifically child-oriented research is found in studies, largely by English or media educators. This work has focused on the social practices around children's peer play with console or computer games. Studies find that children modify game play to accommodate multiple players, and that highly social (if not always democratic) peer contexts influence how games are played and discussed (Beavis, C. 2005; Beavis, C. & Charles, C. 2005; Livingstone, S. 2002; Mackey, M. 2006; Schott, G. & Kambouri, M. 2006).

Another class of studies explores the concept of players as social actors, taking on different roles and pursuing game-play for differing social purposes. Analysing the social worlds of early multi-user domains (MUDs), which were text-based, Richard Bartle described the following taxonomy of social styles or gratifications from the MUD:

i) Achievement within the game context.

Players give themselves game-related goals, and vigorously set out to achieve them. This usually means accumulating and disposing of large quantities of high-value treasure, or cutting a swathe through hordes of mobiles (i.e. monsters built in to the virtual world).

ii) Exploration of the game.

Players try to find out as much as they can about the virtual world. Although initially this means mapping its topology (i.e. exploring the MUD's breadth), later it advances to experimentation with its physics (i.e. exploring the MUD's depth).

iii) Socialising with others.

Players use the game's communicative facilities, and apply the role-playing that these engender, as a context in which to converse (and otherwise interact) with their fellow players.

iv) Imposition upon others.

Players use the tools provided by the game to cause distress to (or, in rare circumstances, to help) other players. Where permitted, this usually involves acquiring some weapon and applying it enthusiastically to the persona of another player in the game world.

So, labelling the four player types abstracted, we get: achievers, explorers, socialisers and killers (Bartle, R. 1996).

More recent research on MMOGs and peer play around video games has developed Bartle's typology to examine the way in which games offer multiple social roles and experiences, many of which are cooperative and relationship-oriented (Burn, A. 2006; Mackey, M. 2006; Schott, G. & Kambouri, M. 2006; Taylor, T. 2006). Taylor's autoethnographic study, among others, found that even 'power gamers', those whose identity and self-esteem rests on prowess in the game, enjoy displaying this through mentoring and answering cries for 'help' from new gamers as much as by killing and domination (Taylor, T. 2006). Recent, nationally-representative surveys of children's media use in the US context also find that male sociability in the teenage years is facilitated by game culture (Roberts, D., Foehr, U. & Rideout, V. 2005).

Games and learning

In parallel with the larger Media and Society project's focus on children's leisure-time, rather than school-time, this review does not provide a detailed account of the substantial research literature on games use in formal pedagogical or therapeutic settings, where the design of the game is specifically tailored to learning or counter-conditioning outcomes, or where games are integrated into the curriculum to promote specific learning outcomes.

However, there is a large and growing body of educational and literacy research devoted to games (Arnseth, H. 2006; Beavis, C. 2005; Buckingham, D. 2000, 2006b; Buckingham, D. et al. 2005; Burn, A. & Carr, D. 2006b; Chandler-Olcott, K. & Mahar, D. 2003; Gee, J. 2003; Griffiths, M. 2003b; Jenkins, H. 2006a, 2006b, 2006c; Kirriemuir, J. & McFarlane, A. 2004; Mackey, M. 2006; Mitchell, A. & Savill-Smith, C. 2004; Oliver, M. & Pelletier, C. 2006; Parliament of Victoria 2006; Schaffer, D. 2006; Schott, G. & Kambouri, M. 2006; Steinkuehler, C. 2005; Unsworth, L. 2006).

There is an overwhelming consensus from researchers that the use of games in educational settings improves student motivation and, when specifically designed with curriculum goals in mind, enhances learning. Evidence is generally based on case studies using close observation techniques, thus facilitating detailed interpretation of children's responses to the learning environment. On the other hand, samples are, consequently, not large or representative, and outcomes, if measured at all, are compared with generalised achievement scales. The review was unable to find any comparative research in which outcomes were measured over time in controlled studies.⁴ This is an area in which further research would be beneficial, given that definitions of literacy remain contested in educational research and policy.

For some popular culture advocates, all fan participation is constructed as educational rather than social or recreational (Jenkins, H. 2006b). However, there is comparatively little research documenting generalised learning from leisure use of games. Recent studies grounded in

social semiotic or activity theory⁵ have looked at players as social actors practising in-game mentoring and collaborative learning. Gaming is analysed as a cognitively active practice, in which players co-construct the meaning of their interactions, and collaborate to further mutual play (Banks, J. 2002; Jenkins, H. 2006c; Steinkuehler, C. 2004, 2005).

Other media education researchers express caution in speculating whether in-game skills are generalised outside the world of the game (Buckingham, D. et al. 2005; Oliver, M. & Pelletier, C. 2006; Schott, G. & Kambouri, M. 2006). In the debate about the likely shape of future media and ICT literacies, many researchers have speculated that games skills may prove to be the most valuable kind for ICT performance (Livingstone, S. 2002; Seiter, E. 2005).

Taking a more institutional view of learning, a nationally-representative survey of more than 2,000 US children from 8–18 years of age, found that academic performance, measured by grade point average, was influenced by exposure to only two media: print and video games. Children who spent more leisure time reading achieved higher grades, while those who had higher exposure to video games achieved lower grades. Computer use, on the other hand, and personal access to computers was positively correlated with reading (Roberts, D., Foehr, U. & Rideout, V. 2005). This was a self-report study, using questionnaires, focus groups and time-use diaries completed by children, but without input from teachers or parents. The researchers allowed for ‘grade inflation’ by respondents. It seems unlikely, though possible, that ‘readers’ uniformly inflated their performance, while ‘game players’ uniformly deflated theirs.

Games and regulation

Games are subject to classification on the basis of content in Australia, and this is true of other national contexts as well. Studies of parental attitudes show that most Australian parents are aware of and use games ratings, are confident about their ability to manage their child’s access to games, and are not greatly concerned about adverse influence (Cupitt, M. & Stockbridge, S. 1996; Durkin, K. & Aisbett, K. 1999; NetRatings Australia 2005).

The Australian media environment has always been highly regulated in comparison with the US and there is widespread acceptance and use of the classification system in managing content choice. This is in marked contrast to the US situation, in which attempted enforcement of game classification in St Louis was subject to challenge in the US Court of Appeals on the basis of freedom of speech (Amici Curiae 2002; Jenkins, H. 2006c; Kline, S. 2003; see also Perry, R. 2004).⁶

The internet is not readily divided into educational and recreational uses. However, games are also subject to point of sale intervention on the part of parents. There is a financial threshold for participation and this, rather than interest, may account for the higher proportion of adult gamers (Griffiths, M., Davies, M. & Chappell, D. 2004). A sizable minority of children report having played games of which their parents would not approve, either at houses of friends, through the agency of older siblings, or adult gamers (Funk, J. et al. 2006).

The *Generation M* study found, counter to expectations, that the presence or absence of rules governing both video gaming and computer use is not related to the amount of exposure. Although their data showed that children who live in homes where parents attempt to control video gaming spend less time with video games than do children with no video game rules, the difference (contrary to expectations) was not found to be statistically significant (Roberts, D., Foehr, U. & Rideout, V. 2005).

Finally, since games have now been part of media culture for many decades, the number of children whose parents are gamers is on the increase; that is, the much-lamented discrepancy

between children's and parents' entertainment preferences and screen literacies is not likely to be sustained in the future. While the review did not locate any studies specifically addressing this historical trajectory (though see Fromme, J. 2003), it is a topic in online forums and journalism (Entertainment Software Association 2006; Varney, A. n.d.) and instances of parent-child play are recorded in the ethnographic and qualitative research (Mackay, H. & Ivey, D. 2004; Wartella, E., Vandewater, E. & Rideout, V. 2005).

Summary

The available research suggests that games are played by all age groups and by both genders. However, there are social, developmental and gender differences in the amount and type of game-play incorporated into children's lives.

There is little evidence to suggest that games are an addictive or anti-social activity. On the contrary, they are used in highly social ways in peer contexts, particularly by teenage boys and young men.

As is the case for other screen media, findings suggest that, while there is consistent evidence in the scientific literature to support claims for short-term effects on arousal, thoughts and emotions, there is little evidence for a substantial association between exposure to violent games and serious real-life violence or crime.

An 'accumulation-of-risk' model has been applied to an understanding of where game violence, as well as other media violence, fits into the learning and demonstration of aggressive behaviour. Risk factors suggested by researchers include individual psychological traits and paucity of social 'assets' (such as family, neighbourhood and community), while protective factors are enjoyed by 'asset-rich' children.

There is wide-spread agreement that use of games in educational settings improves student motivation and has great potential to enhance learning.

¹ See (Anderson, C. & Dill, K. 2000; Anderson, C., Gentile, D. & Buckley, K. 2007; Anderson, C. 2004; Anderson, C. & Bushman, B. 2001; Anderson, C. & Dill, K. 2000; Anderson, C. & Morrow, M. 1995; Baldaro, B. et al. 2004; Ballard, M. & Lineberger, R. 1999; Bartholow, B. & Anderson, C. 2002; Bartholow, B., Bushman, B. & Sestir, M. 2006; Bartholow, B., Sestir, M. & Davis, E. 2005; Bushman, B. & Anderson, C. 2002; Carnagey, N. & Anderson, C. 2005; Dill, K. & Dill, J. 1998; Funk, J. 2001; Funk, J. et al. 2004; Funk, J. et al. 2006; Gentile, D. et al. 2004; Kirsh, S. 2003; Lachlan, K., Smith, S. & Tamborini, R. 2005).

² See (Beavis, C. 2005; Beavis, C. & Charles, C. 2005; Buckingham, D. 2006a; Carr, D. et al. 2006; Cassell, J. & Jenkins, H. 1998; Cover, R. 2006; Downes, T. 2002; Ducheneaut, N. & Moore, R. 2005; Durkin, K. & Aisbett, K. 1999; Durkin, K. & Barber, B. 2002; Facer, K. et al. 2003; Fromme, J. 2003; Funk, J. et al. 2006; Gee, J. 2003; Gelfond, H. & Saloni-Pasternak, D. 2005; Greenfield, P. et al. 2006; Griffiths, M., Davies, M. & Chappell, D. 2004; Holloway, S. & Valentine, G. 2003; Humphreys, S. 2003; Jenkins, H. 1998, 2006a, 2006b, 2006c; Juul, J. 2005; Livingstone, S. 2002; Livingstone, S. & Bober, M. 2005; Mackay, H. & Ivey, D. 2004; Paulk, C. 2006; Roberts, D., Foehr, U. & Rideout, V. 2005; Schaffer, D. 2006; Schott, G. & Kambouri, M. 2006; Seay, A. et al. 2004; Seiter, E. 2005; Steinkuehler, C. 2004; Taylor, T. 2006; Thurlow, C., Lengel, L. & Tomic, A. 2004).

³ Guilds are 'officially sanctioned organizations of players with a hierarchical leadership structure' (Taylor 2006) and constitute the primary formal organisational structure within the game. In general, they are of two types: family or social guilds, which foster personal connections and a 'playful' or less competitive engagement with the game; and raiding guilds, which are characterised by a 'well-articulated commitment to pursuing the high-end game' (Taylor 2006).

⁴ In a long-standing research program, New Zealand researcher, John Hattie, has completed a comprehensive meta-analysis of hundreds of studies of educational outcomes from various teaching and classroom practices. His meta-analysis finds use of games and other information and communication technologies (ICT) do in some cases have a positive effect on students' learning. However, this effect is no greater than the average effect size of all practices used by teachers when compared (Hattie, J. 2007). That is, the increase in performance when games are used in the classroom is no greater when compared to any other type of method employed in all comparison groups, and is in some cases much less (see also Rowe, K. 2006).

⁵ For discussion of these theories see (Engeström, Y., Miettinen, R. & Punamäki, R.-L. 1999; Halliday, M. 1978; Hodge, B. & Kress, G. 1993).

⁶ The St Louis legislation, which was subsequently overturned on appeal, sought to ban the sale or rental of material, classified as violent to minors, much in the same ways as tobacco and alcohol sales, or access to R rated material is prohibited. Australian media scholars were among those opposing the legislation, which would have allowed enforcement of the ratings system.

8 Internet and new media applications

Together with the communication technologies it links and the diverse range of applications it hosts, the internet provides researchers with unique methodological difficulties. It is a globalised network, whose users and content providers may be largely invisible to scrutiny (see also Coroneos, P. 2001). Collecting reliable data can be difficult, given the ease in which offline identities can be hidden. A screen name such as 'lonelygirl15' is easily appropriated by someone who is not female, adolescent, or lacking a supportive 'other', so that it is hard for researchers to establish which users fall into the target cohort they wish to study (Wood, R., Griffiths, M. & Eatough, V. 2004). On the other hand, given the ease of self-publishing it affords, the internet has been seen to offer a window into the previously hidden world of children's and adolescents' peer interaction and communication (Greenfield, P. & Yan, Z. 2006).

The internet is often discussed as a content delivery platform, a system for accessing an infinite variety of content (Goggin, G. & Griff, C. 2001), which may be benign, improving or problematic. It is also studied as a communication infrastructure, a system allowing (in a generational sense) peer-to-peer, or peer to non-peer contact (Haddon, L. 2004). This contact may also be beneficial, problematic or harmful.

The internet is also researched as a social space, facilitating networking that may be supportive and contribute to the construction of identity/identities (Shklovski, I., Kraut, R. & Kiesler, S. 2006). In addition, the 'social net' allows enjoyment of entertainment, which may also be highly social in nature (Jenkins, H. 2006b). Users of entertainment genres can also be content creators (Young, S. 2001), linked by communities of interest (Ito, M. 2006). Researchers have also conceptualised these social behaviours as potentially compulsive, resulting in harm to offline social relationships (Kraut, R. et al. 1998).

Finally, it is scrutinised as a pervasive space, even an ungovernable one (Oswell, D. 1999). Its uptake has been so rapid, and its effects on practice in work and educational contexts so significant, that not being internet literate and enabled is rarely perceived as a viable option for most families (Livingstone, S. & Bober, M. 2004a; Livingstone, S., Bober, M. & Helsper, E. 2005). Crossing national boundaries in both content production and consumption (Airo-Farulla, G. 2001), and bypassing national regulatory structures (Coroneos, P. 2001; Oswell, D. 2007; Stein, L. & Sinha, N. 2006), whether harmful or beneficial the influences and social consequences of the internet, it is often argued, must be dealt with by, primarily, non-regulatory means (Livingstone, S. & Bober, M. 2006). Discussion of problematic internet content and practices, therefore, usually involves recommendation of literacy education (Buckingham, D. et al. 2005; Livingstone, S. 2006a; Livingstone, S. & Bober, M. 2006; Luke, C. 2001).

Content

Despite the diversity of content available online, it has been noted that there is very little empirical research examining the potentially harmful impact of internet content. This is in marked contrast to the large body of research on the harmful effects of more traditional media, particularly television (Millwood Hargrave, A. & Livingstone, S. 2006), largely due to the methodological difficulties inherent in situating, categorising, and representatively sampling the users of internet content.

Pornography and sexually explicit content

The greatest body of research centres on ‘pornography’ and ‘sexually explicit content’. While these terms are not easily distinguished as categories, the research literature has attempted to differentiate, along the following lines:

NARRATIVE CONTEXT

There is a large body of US psychological research focusing on (primarily) older terrestrial media, making a distinction between (1) ‘embedded content’, where the sexual content is embedded within a larger narrative context, and (2) ‘sexually explicit media’, which is defined as content depicting nudity and sexual acts, either simulated or real, deployed as stimulant for sexual arousal without significant non-sexual story context (Malamuth, N. & Huppim, M. 2005; Malamuth, N. & Impett, E. 2001; Roberts, D. 1993).

EDUCATIONAL OR HEALTH-RELATED CONTENT

Sexual health advice literature may be explicit (Barak, A. & Fisher, W. 2003) and this is usually regarded as beneficial or at least benign to users. Surveys conducted in the UK find that adolescents, particularly boys, prefer to get advice from the internet (Livingstone, S. & Bober, M. 2004b, 2005), and that children prefer to learn about sex from the media in preference to any other source, since encountering or discussing sexual material in the company of parents is typically accompanied by strong embarrassment (Buckingham, D. & Bragg, S. 2004).

These findings are supported by US research, in studies covering traditional and new media (Borzekowski, D., Fobil, J. & Asante, K. 2006; Borzekowski, D. & Rickert, V. 2001; Brown, J.D. 2002; Vickberg, S. et al. 2003; Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006; Walsh-Childers, K., Gotthoffer, A. & Ringer Lepre, C. 2002).

A study of teen health bulletin boards found that information about sexuality and relationships was sought after with great frequency evidencing more than twice as much interest (measured by number of threads) in a sexual health bulletin board as in a general teen issues bulletin board hosted by the same service (Suzuki, L. & Calzo, J. 2004; Treise, D. & Gotthoffer, A. 2002).¹

PORNOGRAPHY

Pornography is usually understood to refer to material that is degrading or exploitative (Millwood Hargrave, A. & Livingstone, S. 2006). Pornographic material may be further classified into sexual imagery which is (1) non-violent and consensual, (2) violent and/or non-consensual, (3) criminal in its nature. Pornography involving children is illegal, as is possession or distribution of such material. Such images by their very existence constitute proof that a crime has been committed (O’Connell, R. 2000, 2003).

Studies have attempted to quantify the amount of sexually explicit material on the internet (Millwood Hargrave, A. & Livingstone, S. 2006; Orr, D. & Stack-Ferrigno, J. 2001), and the frequency with which children and young people are found to access it. Studies have largely focused on the inadvertent exposure of children to content that would be restricted by regulation in the case of more traditional media (Flood, M. 2007; Greenfield, P. 2004b; Livingstone, S. & Bober, M. 2004b; Livingstone, S. & Bober, M. 2005).

The *UK Children Go Online* survey found that ‘a sizable minority of children and teens have seen an upsetting or disgusting image, although the majority have either not seen or not been concerned about what they saw online’ (Millwood Hargrave, A. & Livingstone, S. 2006). A qualitative study of young people’s views about media harm also supports this finding (Nightingale, V. & Griff, C. 2000). A US survey, on the other hand, reported a higher level of distress (Mitchell, K., Finkelhor, D. & Wolak, J. 2003).

As Millwood Hargrave and Livingstone (2006) point out, there may be reasons why children downplay their level of distress at unwanted sexual content, such as wanting to appear ‘cool’, though the researchers are sceptical that as many as 54 per cent under-claim in this way in an anonymous survey. However, they also draw attention to the sizable minority (35 per cent) whose dislike was strongly registered as ‘disgust’.

Does pornography harm children?

As is the case for adult consumers, it is methodologically difficult to prove conclusively that harm results from children’s exposure to pornography and sexually explicit content (Thornburgh, D. & Lin, H. 2002). Experiments are the only methodology that can establish proof of cause and effect and, for ethical reasons, researchers are unable to expose children to pornography to test the hypothesis. Those that have been done have generally used college students as experimental subjects (Malamuth, N. & Huppert, M. 2005; Malamuth, N. & Impett, E. 2001).

Psychological studies from the US ‘effects’ tradition have used both experimental and survey methods. These studies express concern that exposure of children may have negative developmental effects, resulting in early uptake of sexual activity, distorted sexual attitudes and potentially motivating increased sexual aggression (Greenfield, P. 2004a, 2004b; Malamuth, N. & Impett, E. 2001; Quinn, J. & Forsyth, C. 2005).

Inferences of long-term effects from the short-term effects measured in experiments are usually explained by social learning theory (Bandura, A. 1977, 1986), as is the case for other media. Real world and media depictions of practices are held to influence both children and adults, through a process of learning by social modelling. In terms of sexual behaviour, this perspective suggests that observations of sexual media may affect attitudes and norms and other cognitive processes, suggest scripts for novel sexual behaviour, and affect inhibitions concerning socially discouraged forms of sexual practice.

However, it is recognised that many variables influence how far exposure to sexual representations affect consumers. These include: cultural milieu, the particular content of the stimuli, peer or family norms, family mediation and communication styles and prior disposition.

Cultural milieu refers to ‘the individual’s background, gender, and personality characteristics’.

The particular content of the stimuli refers to the ‘messages conveyed, the consequences of the acts depicted, the degree of sexual explicitness of the material, the degree of arousal generated, etc.’, and the current circumstances of the environment in which the person is exposed to the stimuli’ (Malamuth, N. & Impett, E. 2001).

Peer or family norms refer to findings that a strong peer or family group holding different norms from those depicted in the sexual content is a primary mediating factor, as is cognitive ability (which may be related to media literacy) (Malamuth, N. & Impett, E. 2001).

Family mediation and communication styles are also a factor. Research on older media forms demonstrates that parental mediation of children's media use has consequences for media effects. This effectiveness is influenced by family interaction levels and family communication styles. Family influences are found to provide strong counter-impressions to those provided by media (Calvert, S. 1999; Malamuth, N. & Impett, E. 2001).

Prior disposition refers to user selection of sexually explicit content being related to prior inclination: choice and content are said to 'reciprocally determine' effects on individuals (Malamuth, N., Addison, T. & Koss, M. 2000; Malamuth, N. & Huppert, M. 2005; Malamuth, N. & Impett, E. 2001).

Quantitative social research has also examined the importance of individual and societal variables. In an Oxford Internet Institute report, based on a survey of Israeli teens, Mensch argues against a technological determinist perspective, in which individuals are passive users of the internet. The study finds that heavy users of the internet for pornography are more likely to report weaker family ties and social integration, than those teens whose motivations for using the internet primarily for communication, information searching, entertainment or learning are significant variables, and that the percentage of adolescents using the internet for pornographic consumption is lower than that using for other purposes. Heavy pornographic users, he concludes, represent a more socially marginal group (Mensch, G. 2005).

CONTENT ANALYSES

Studies employing content analysis have also deployed theoretical rationales including religious or feminist perspectives to argue that sexually explicit content is harmful at the individual or societal level.² Feminist film theory has traditionally argued that pornography objectifies women and constitutes, as a genre of representation, sexual violence against women and children in its own right. The camera focalisation in such images, is seen to constitute a 'male gaze' (Mulvey, L. 1975) and, in the case of pornography, normalises a viewing position regarding women and children that encourages male violence (Attwood, F. 2004, 2005; Itzin, C. 2002).

Similarly, an Australian study of youth and pornography (Flood, M. & Hamilton, C. 2003b) provides a detailed visual analysis of compositional rhetoric, arguing that the degrading nature of the images implies harmful effects on young people. Further, in her study of pornographic videos featuring under-age children, Rachel O'Connell found that sex with children is portrayed in the narrative context of ordinary childhood activities, such as playing with toys or watching TV. She argues that child-adult sex is being represented as if it were 'just a part of normal childhood' to the consumers of such (illegal) pornography. By normalising what she terms 'child-sex iconography' these videos encourages the practice of sexual exploitation of children (O'Connell, R. 2000).

Risk factors

In their recent review of research literature on harm and offence in media content, Millwood Hargrave and Livingstone find that the highest risk factors indicating long-term harms from exposure to pornography are: aggressive personality types, children with behaviour disorders, young violent offenders, and sexual offenders. Material depicting sexual violence has been considered to pose the greatest risk for these vulnerable groups (Millwood Hargrave, A. & Livingstone, S. 2006). This is due to the weight of experimental evidence on effects of media violence, discussed previously in the context of research on television.

Some studies have suggested that the nature of the internet itself poses significant risks—that internet pornography is more pervasive, more accessible and therefore more harmful than more traditional media, such as magazines and video (Buzzell, T. 2005; Flood, M. & Hamilton, C. 2003a, 2003b). Internet content is argued to be different in a number of ways, due to its availability through multiple applications, such as bulletin boards, email, chat and file-sharing (Buzzell, T. 2005; Thornburgh, D. & Lin, H. 2002), and in a variety of multimedia forms, such as video, animation, texts, chats and interactive sexual games. In addition, the internet offers users the means to become producers of sexual content, splicing videos, producing and distributing images of themselves and others (Netsafe 2005; Nightingale, V. & Griff, C. 2000).

Emotional responses, 'uses and gratifications'

While it may be difficult to prove actual harm, there is a substantial body of research documenting children's distress or distaste when they accidentally come across online pornography (Livingstone, S. & Bober, M. 2004b, 2005; NetRatings Australia 2005; Nightingale, V. & Griff, C. 2000). Age and gender are factors in how upsetting children find these types of content. Nightingale's qualitative research found that the young people in her sample felt that they had not been harmed by the pornography they had encountered, while Livingstone and Bober also note that older respondents felt, retrospectively, that they had been 'too young' to encounter sexually-explicit content at the time they first did so.

Studies have also suggested that access to sexually explicit content may be beneficial to adolescents' development of sexual identity (Kibby, M. 2001; Tolman, D. 1994). US studies from a developmental psychological perspective has examined the use of social applications in the context of sexuality and identity development. Analysing the discourse and other communication practices of teens using bulletin boards and chat rooms, the research argues that participants co-construct their own environment to explore the same developmental issues online as they do offline. However, the internet is seen to offer 'new affordances', such as anonymity, lack of potentially inhibiting information about personal appearance, and opportunities to discuss sensitive issues without the embarrassment of face-to-face interaction (Greenfield, P. 2004a; Greenfield, P. et al. 2006; Livingstone, S. 2006; Subrahmanyam, K., Greenfield, P.M. & Tynes, B. 2004; Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006; Suzuki, L. & Calzo, J. 2004).

A more cultural approach is taken by a Western Australian study using an ethnographic methodology that documented the way in which online sexual content provided currency within teenage boy culture. Parents in the study often viewed this as a transitional phase, acknowledging its role in socialisation (Holloway, D., Green, L. & Quin, R. 2004). In addition, negotiation of the conditions under which children and young people access internet content involves juxtaposing the rights of adults to access pleasurable content with the rights of children to both protection and privacy (Greenfield, P. 2004b; Helsper, E. 2005; Livingstone, S. 2006).

Contact

PEER-TO-PEER

Communication and social networking between child peers is usually considered a benefit, and is discussed in greater detail below. However, there are harmful or distressing examples of peer-to-peer contact both online and offline.

There has recently been increased awareness of bullying practices in the context of email, internet chat communities and mobile telephony (Livingstone, S. & Bober, M. 2004b, 2005; Netsafe 2005; Ybarra, M. & Mitchell, K. 2004), with surveys reporting that a significant minority of children have experienced bullying, often of an intense, threatening nature in chatrooms, via email and text messaging, impairing the quality of online interaction and creating difficulties in school contexts (Parliament of Victoria 2006). Camera phones and web portals are also used by children and young people to bully peers (Campbell, M. 2005). As with face-to-face bullying, symptoms experienced by victims are depression, anxiety, even illness.

While it is not clear from studies to date whether the online environment increases the incidence of malicious peer-to-peer contact, researchers find that verbal and psychological bullying may have negative long-term effects, and the bullying discourse can easily be circulated to a much wider audience than in face-to-face interactions: as in the case of malicious content published to websites, or forwarded to all recipients in an extended peer contact list by email or SMS (Campbell, M. 2005). Studies have also discussed the potential of anonymous mobile and online communication to enhance social entrapment strategies. Online interactions take place between ‘avatars’: these are symbolic identities behind which users can hide (Millwood Hargrave, A. & Livingstone, S. 2006).

Sexual harassment, unwanted peer contact experienced as such, and ‘cyberstalking’ have all been discussed in the recent literature (Bocij, P. 2003; O’Connell, R., Price, J. & Barrow, C. 2004). Surveys conducted by the Cyberspace Research Unit in the UK found that a significant minority (20 per cent) of children aged 9–16 years had been harassed in a chat room, while only slightly less (14 per cent) admitted they had themselves harassed another user (O’Connell, R., Price, J. & Barrow, C. 2004). The researchers also found that more than half of the sample of 8–11 year-olds had experienced conversations of a sexual nature online, though their nature—flirting with peers or potentially abusive interactions with adults—could not be determined (O’Connell, R., Price, J. & Barrow, C. 2004). Serial stalking online, or ‘cyberstalking’ appears to be a less frequent occurrence, though clearly distressing to victims (Bocij, P. 2003).

An Australian study also found sexual harassment practices among young people aged 10–15 years, including the circulation of pornographic material. These practices sometimes involved the use of image manipulation software (Nightingale, V. & Griff, C. 2000). British and US studies have also reported the practice of image circulation, together with other risky behaviours such as divulging personal information to strangers (Livingstone, S. 2006; Livingstone, S. & Bober, M. 2004b, 2005; Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006).

In their study of teenage chat rooms, Subrahmanyam et al. found that a greater proportion of girls and younger teenagers chose to visit moderated rather than unmoderated chat rooms as a safer environment to explore their developing sexuality. Unmoderated chat rooms were more likely to sustain an ecology in which explicit rather than implicit sexual conversation was the norm, with a greater proportion of boys and older teen participants (Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006).

SELF-HARM

The potential for websites and online communities to encourage suicide and other self-harmful behaviours has also been researched (Barak, A. & Miron, O. 2005). One recent US study used observational data from message boards to investigate how adolescents solicit and share information related to self-injurious behaviour. It found that online interactions clearly provide essential social support for otherwise isolated adolescents, but they may also normalise self-harming behavior and add potentially lethal behaviors to the repertoire of established adolescent self-injurers (Whitlock, J., Powers, J. & Eckenrode, J. 2006).³

PEER TO NON-PEER: PAEDOPHILE CONTACT

Recent UK and US studies find that a significant minority of children befriend strangers online, and some receive unwanted sexual invitations from people they encounter (Finkelhor, D., Mitchell, K. & Wolak, J. 2000; Livingstone, S. & Bober, M. 2004b, 2005).

British and European surveys find that most acquaintances met online are peers or friends of friends, but a small number of children report actually meeting these acquaintances offline. The majority of those met turn out to be other children, and most of the survey participants report having a good time (Millwood Hargrave, A. & Livingstone, S. 2006). Nevertheless, these risky behaviours have occasioned concern that children may become victims of online grooming by paedophiles.

Finkelhor et al. interviewed a large representative sample of children aged 10–17 years, and found that a significant minority had received sexual invitations over the internet (Finkelhor, D., Mitchell, K. & Wolak, J. 2000). However, given the anonymity of many forums in which strangers can be encountered, it is problematic to distinguish peer from non-peer sources for these communications. Anxiety has been expressed about the potential facilitation of child abuse resulting from internet contact (Carr, J. 2004; O'Connell, R. 2003; Wolak, J., Finkelhor, D. & Mitchell, K. 2004).

As O'Connell and others have argued (Krone, T. 2005a; Millwood Hargrave, A. & Livingstone, S. 2006; O'Connell, R. 2000) the internet has become 'integrated into the lifestyle of the modern paedophile'. While the internet clearly provides the same resources for support and networking to paedophiles as for other stigmatised identity groups, more research is needed to ascertain whether or not it increases the levels of offline child sexual abuse. The literature on child sexual abuse in Australia indicates that most sexual crimes against children are committed by family members or persons previously known to the child (Australian Institute of Health and Welfare 2007; Kids Help Line 2005; Kovacs, K. & Richardson, N. 2004). However, there is insufficient data at this stage to ascertain what percentage of all sex crimes against children in Australia are internet-related.⁴

The social net—identity, self-expression and creativity

Adolescence is usually associated with 'identity work'. Successful transition to adulthood has long been seen by developmental psychologists as contingent on the formation of a coherent sense of identity (Erikson, E. 1968), both personal and social (Josselson, R. 1980; Robison, W. 1996). It is now generally understood that identity is dynamic rather than fixed, and partly situational, or context-dependent, so that individuals may take on differing identities (pupil, son, game player) in differing social contexts. Identity in a social sense is constructed partly through organising into groups sharing similar tastes, practices and interests (Hine, C. 2000). Media texts and practices have been studied as they provide contexts for the development of young people's taste, styles, models of interpersonal relationships and roles (Huntemann, N. & Morgan, M. 2001).

Media and cultural studies scholars have examined the way in which young people construct and experiment with social and sexual identities. Identity work is seen to require social relatedness. Construction of social identities and lifestyles has been analysed in studies of communities organised around media fandom (Jenkins, H. 1992, 1998).

More recently, studies of children's culture have argued that the term 'fan' insufficiently recognises the skills and knowledge possessed by aficionados of media subcultures. In a study of Japanese *otaku* (*manga* and *anime* related fandom), Mizuko Ito argues that 'a sense of connoisseurship, attention to esoterica, media mixing and amateur cultural production' are part of the sense of what it means to be an insider into these media lifestyles (Ito, M. 2006).

Surveying children's media literacy skills, Buckingham et al. find that, just as the decoration of the adolescent's bedroom (Bloustien, G. 2003; Steele, J. & Brown, J.D. 1995) is a process of both creativity and identity construction, choices of personal 'media mixes' involve lifestyles that centre around cultural consumption, production and circulation (Buckingham, D. et al. 2005).

Researchers have studied the textual and expressive content of children's online communication and production, particularly homepages and weblogs (blogs). The rapid change in technology and simplicity of authoring tools means online publishing practices such as these, which researchers found to be rare in the early years of the century (Facer, K. et al. 2003; Horrigan, J. 2006; Livingstone, S. & Bober, M. 2004a) are now commonplace. There is a growing number of blogs and homepages produced by young people, especially teenage girls (Buckingham, D. et al. 2005; Gregg, M. 2006; Mazzarella, S. 2005).

Many of the studies in this area focus on the social networking and ‘identity work’ involved in such practices (Turkle, S. 1995). Some studies have argued that this self-expressive publishing combats the silencing of girls’ voices that is traditionally experienced as they reach adolescence (Polak, M. 2006). Other studies have argued that web-based portals provide ‘spaces of self-representations, support and belonging for youth who are marginalised on the basis of their gender and sexual differences’ (Driver, S. 2006). Scheidt (2006) finds that, ‘like homepages before them, weblogs are prominent venues for adolescents to present themselves in textual and multimedia fashion. They are vehicles for development of a personal voice and digital fluency’ (Huffaker, D. 2004).

Blogs are emerging as an area of interest for literacy educators because they involve, essentially, diary writing. As such, they have been seen as a contemporary extension of traditional, often feminine literacy/literary practices. In a recent Australian study, Angela Thomas found that fictional blogs by teenage girls benefited their literacy and identity development (2006). Another UK study found that teenage participation in online communities was akin to apprenticeship, in which teenagers were acculturated, developing shared meanings and values, learning informally through a community of practice (Davies, J. 2006).

PEER-TO-PEER CULTURE

Historical studies of what Henry Jenkins called ‘participatory culture’ (1992) find that the appropriation of mainstream cultural icons and narratives for the purposes of creativity, sociability and identity formation predate digital production and online exchange. In the pre-internet era the threshold for participation was higher. Fan-produced art, fanzines, videos and audiotapes were viewed socially at conventions and exchanged by mail. The expense of travel and content creation was significant, excluding most children and young people. In contemporary culture, however, opportunities for easy access to a rich archive of fan communication and content exist for anyone with access to an internet-enabled computer. Ito finds that this lateral ‘peer to peer social organisation represents both an evolution of existing fan groups, as well as an expansion of existing fanlike cultural activity to a broader demographic’, including young people (Ito, M. 2006).

USER-GENERATED CREATIVITY

Creativity is an emerging research interest among scholars from various disciplines. ‘User-generated content’ or creativity designates a form of participatory culture that applies particularly to production enabled by new media platforms and services (Banks, J. 2002; Fitzgerald, B. & O'Brien, D. 2005; Frau-Meigs, D. 2006; Morris, S. 2004; Notley, T. & Tacchi, J. 2004). In addition to the more literary productions like homepages and web diaries, this can include: sophisticated scripting (programming) required to refashion and re-author game-play; producing, splicing (editing/combining) digital video, animations and/or images; or creating music using software applications. These productions may be published to online galleries, blogs and social networking portals such as YouTube, MySpace and Flickr. While there has been much discussion of these newer media productions in the popular media and in industry projections, there is very little academic research available on children’s practice in this area to date.

MANAGING INTERPERSONAL RELATIONSHIPS ONLINE

The way in which young people manage particular interpersonal relationships online has also been examined. Qualitative studies from the UK, involving in-depth observation of children's practice together with interviews, found that, for younger teens in particular, online and mobile communication were used to negotiate some aspects of interpersonal communication that would be embarrassing when handled face-to-face (Livingstone, S. & Bober, M. 2004b; Livingstone, S. & Bovill, M. 2001). They found that online communication was important for identity play, allowing children to push the boundaries of acceptability. They also found that online communication allows children to display skills and mastery based on the deployment of a distinctive online interaction style, while negotiating certain socio-sexual aspects of peer interaction.

For teenagers, in particular, email constituted an important part of identity construction, 'trying out new roles as sexual beings or otherwise desirable, dynamic personalities' (Livingstone, S. 2006). Livingstone et al. suggest that in the light of the lengthening period of adolescence, in which children 'mature' later in terms of financial independence and entry into employment, but earlier in terms of consumerism, sexual experimentation and independence of lifestyle, management of interpersonal relationships online may increase in importance, to the same degree that access to the street corner where teens used to 'hang out' is restricted.⁵

Digital divide

The digital divide is a long-standing concept that relates to the stratification of groups according to access—a division between those with the resources to participate in online opportunities, and those whose resources exclude them. Research has examined cross-national and regional inequalities in access (Holderness, B. 2006; Norris, P. 2001), and between developed and less developed nations. Other studies have researched differences based on race, gender, age, levels of education of parents, and socio-economic status (Livingstone, S., Bober, M. & Helsper, E. 2005; Loges, W. & Jung, J. 2001; Rice, R. & Haythornethwaite, C. 2006; Singh, S. 2001). Australian and UK research generally finds that age of child, socio-economic status and education levels of parents influence the quantity and quality of access children enjoy, though gender is less of a factor (Livingstone, S. & Bober, M. 2005; Livingstone, S., Bober, M. & Helsper, E. 2005; NetRatings Australia 2005).

Studies suggest that it is not so much access to the internet connection itself as the differential levels of literacy and education which make up the crucial 'divide' (Buckingham, D. et al. 2005; Castells, M. 2002). Children from households with more educated parents, and a higher socio-economic status, are not only more likely to have a home internet connection but be enabled to take up a greater range of potential uses and roles in online interactions (Buckingham, D. et al. 2005; Livingstone, S., Bober, M. & Helsper, E. 2005; Rice, R. & Haythornethwaite, C. 2006).

Participation

The term participation has been used to describe creative and interactive agency in online interactions and participation in civic or pro-social activities online (Livingstone, S. & Bober, M. 2004a). While the threshold of technical literacy required for interactivity and creativity has dropped in recent years, such that online content creation is more readily accomplished by those without skills in coding HTML, children's participation in civic engagement remains a theme in the literature (Buckingham, D. 2000; Buckingham, D. et al. 2005; Carpini, M. 2000; McLeod, J. 2000; Montgomery, K. & Gottlieb-Robles, B. 2006; Youniss, J. et al. 2002). Apart from activities mediated by teachers or other adults, there appears to be little research documenting independent civic engagement on the part of young people.

Regulation

The problematics of parental regulation are a key theme in the research literature (Livingstone, S. 2006; Livingstone, S. & Bober, M. 2006; Rideout, V. et al. 1999; Roberts, D. 2000; Roberts, D., Foehr, U. & Rideout, V. 2005). A recent large-scale study of Australian children's internet use found that two-thirds of parents reported supervising their child's internet use by direct visual surveillance, though this higher involvement was found to be inversely proportional to the child's age. A majority reported setting rules for internet use, primarily sanctioning types of content (websites allowed) or restricting activities (such as chat), together with limits on the overall time allowed online (NetRatings Australia 2005). While the study did include an in-home interview, it primarily relied on self-reporting measures, without any direct observation of children's internet use in everyday contexts. Importantly, there is a large and statistically significant difference in parents' and children's reporting of both rule-setting and parental supervision activity, with children reporting less supervision and rule-making.

These results are supported by overseas studies (Livingstone, S. & Bober, M. 2004a; Livingstone, S. & Bober, M. 2006; Millwood Hargrave, A. & Livingstone, S. 2006). Researchers have explained parents' over-reporting of involvement as instances of the 'good parent' syndrome, in which participants' responses reflect a desire to be seen as socially responsible in their role as caregivers. Children's under-reporting has been attributed to lack of awareness of parental surveillance or rules; or as reflecting a tactic to evade restrictions on access to pleasurable content and activities, particularly private communications with peers (Cupitt, M. & Stockbridge, S. 1996; Greenfield, P. et al. 2006; Gross, E. 2004; Livingstone, S. & Bober, M. 2004b; Livingstone, S. & Bober, M. 2006; Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006).

Studies have found that these strategies of rule evasion are facilitated by the child's greater literacy with new media applications, including screen manipulation, managing multiple windows and multitasking (Foehr, U. 2006; Gross, E. 2004; Livingstone, S. 2006; Livingstone, S. & Bovill, M. 2001; NetRatings Australia 2005). For example, one parent in the *kidsonline@home* project reported that her sons often close down MSN Messenger when she entered the room, and another interviewee expressed anxiety over her lack of competence with the linguistic structures and operation of chat applications (NetRatings Australia 2005).

Discussion of internet regulation recognises the limitations on traditional state powers which were effective for older media (Airo-Farulla, G. 2001; Coroneos, P. 2001; Goggin, G. & Griff, C. 2001), such as print, film and broadcasting. Much potential harmful or offensive production, on the other hand, may be generated internationally and not readily subject to national jurisdiction. Policy-focused research has examined the difficulties for the public (parents, teachers, even children) in acquiring the expertise and information required to regulate themselves and their clients or dependents in internet use (Livingstone, S. & Bober, M. 2006; Stein, L. & Sinha, N. 2006). Australian research finds that not all parents find it easy to protect their children from negative experiences or facilitate their children's internet literacy. Lack of technical expertise and knowledge compromised their ability to supervise or educate their child, while other families, particularly sole parents or couples in full-time employment, reported that work commitments reduced their effectiveness (NetRatings Australia 2005).

Researchers have also studied the impacts of regulation on families and children. Studies have classified regulation strategies into positive regulation (encouraging, facilitating or enforcing certain activities) and negative regulation (discouraging or prohibiting certain activities). Mediation practices, studied largely in the context of TV, combine both approaches, from the relatively non-directional strategy of parental-child co-viewing—that is sharing of media consumption—to more rule-driven methods of control. Studies report that the former is more effective in reducing consumption, while the latter lessens inter-familial conflict, but is not as readily employed in the context of internet use (Dorr, A., Kovaric, P. & Doubleday, C. 1989; Lin, C. & Atkin, D. 1989; Livingstone, S. & Bober, M. 2006; Van den Bulck, J. & Van den Bergh, B. 2000a, 2000b).

Media literacy

In the light of the concerns above, studies note that media literacy is advocated (primarily by governments and industry) as a protective measure to safeguard children from harmful effects (Carlsson, U. 2006; Carlsson, U. & von Feilitzen, C. 2006; Livingstone, S. 2002; Luke, C. 2001). Educators and literacy researchers have argued, on the other hand, that media literacy should be understood in a less restrictive manner. In a recent review of children's media literacy in Britain, Buckingham argues that, while children can gain functional media literacy merely from using those media, critical literacies enabling them to identify and make use of the informational, social and creative opportunities of internet use must be supported by quality, adult-led intervention (2003; 2005).

In an Australian context, Carmen Luke makes a case for a new definition of media literacy in media education for Australia. Rejecting narrow definitions of media literacy as 'simplistic pedagogy of front-end user skills'; or an 'add-on unit' to more mainstream literary content for reluctant readers; rejecting also the British media education focus on 'analysis of the politics of pleasure' and 'production of [old] media texts', she calls for development of 'critical literacy' (see also Burbules, N. 1998; Livingstone, S. 2002) that unites the political acumen of cultural studies analysis with a recognition of new, multimedia literacies. She advocates the partnership of media education with computer literacy education (Luke, C. 2001).

There is also an extensive literature in the discipline of English education dealing with the development of multimodal literacy that emphasises children's ability to 'read', 'create/design' and 'produce meaning' simultaneously across a range of multimedia texts and genres (Alvermann, D. 2004; Callow, J. & Zammit, K. 2002; Chandler-Olcott, K. & Mahar, D. 2003; Kress, G. & van Leeuwen, T. 2001; Mackey, M. 2002; Parliament of Victoria 2006; Snyder, I. 1998; Unsworth, L. 2006). Digital literacy theory also posits that 'literacy' is a 'social practice'—featuring children's ability to function as social actors and creators, rather than a reductive notion of 'print-based reading skills' (Chandler-Olcott, K. & Mahar, D. 2003; Cope, B. & Kalantzis, M. 2000; Thomas, A. 2000, 2004).

Informal learning

There is also a large body of literature on the use of multimedia texts, internet search techniques and game-play in classroom situations. While a comprehensive overview of internet use in formal education settings is outside the scope of this review, researchers have found, for example, that use of multimedia promotes both student and teacher motivation and can enhance learning experiences in other curriculum areas (Unsworth, L. 2001). As noted in the chapter on games, there is also research on collaborative learning in independent game playing undertaken in children's own discretionary leisure time. Buckingham's study of children's media literacy (2005) argues that it remains unclear what children are learning in such informal situations, except how to play the game.

There appears to be a need for more research into children's independent learning through online participation. For example, in a chapter entitled 'Learning through web contexts of book-based literary narratives', Len Unsworth finds that children routinely access multimedia web texts as part of engaging with reading literature in book form. These include authors' and publishers' websites. However, the study also reports on children's creation of fan sites devoted to their favourite authors such as Isobel Carmody and J.K. Rowling. This participatory cultural production by children, he argues, constitutes both literacy and social practice, at once textual interpretation and textual creation (Unsworth, L. 2006). Jenkins also reports on children's independent literacy practices in digital contexts (2006c).

Social scientific research in the US has also examined academic skills enhancement from home internet use. In accordance with the greater research emphasis on measurable outcome indicators in the US cultural context, together with culturally specific concerns about school-based equity programs, these studies report on the effects on students' grades in formal school settings. In contrast to the generally pessimistic accounts of television's impact on formal academic skills performance, longitudinal field studies have found a correlation between home internet use and enhanced school performance in disadvantaged minorities (Jackson, L. et al. 2006a, 2006b). While earlier studies had produced some evidence that game playing improved visual and spatial skills, and that home computer ownership was correlated with school performance, Jackson et al.'s studies demonstrated that, independently of parental and peer practice, internet use by disadvantaged children was positively correlated with improved academic performance, particularly reading performance (for support of these findings, see also Roberts, D., Foehr, U. & Rideout, V. 2005).

British and Australian researchers have called attention to the so-called ‘Sesame Street effect’, referring to the recurrent findings that educational media tend to benefit those children from families with existing educational and economic resources more than those from less resourced demographics (Holloway, D. & Green, L. 2003; Livingstone, S., Bober, M. & Helsper, E. 2005). They suggest, therefore, that the mere fact that disadvantaged children may have access to educational media should not replace targeted state or institutional intervention to support those groups.

Summary

Collecting reliable data on internet content and users is difficult due to the ease in which offline identities can be hidden.

For ethical reasons, it is difficult for researchers to prove that harm results from children’s exposure to pornography online. However, there is evidence of children’s discomfort when they accidentally encounter sexually-explicit content.

Researchers find that the highest risk factors for long-term harms from exposure to online pornography are the presence of prior aggressive tendencies or behavioural disorders, or prior sexual or violent offending. It is generally agreed that sexually violent content poses a greater risk than non-violent sexual material. In addition, researchers argue that the more pervasive, accessible and private nature of internet content is potentially more harmful than that accessed through traditional media.

There is evidence of distressing peer-to-peer contact online, such as bullying or sexual harassment. The internet has facilitated practices such as the circulation of child pornography and created the possibility of ‘online grooming’ by paedophiles. However, data are not currently available to ascertain the proportion of sexual crimes against children which are directly attributable to internet use.

Children use the internet for communication, identity building, creative activities, and managing interpersonal relationships. It is also an important resource for formal and informal learning.

Media literacy is often discussed in considering solutions to the challenges faced by governments and parents in regulating internet content.

¹ For a more detailed discussion of recent medical research on this topic, see Chapter 11.

² See also Chapters 2, 4 and 5.

³ For further discussion of recent medical literature on this topic, see Chapter 11.

⁴ ‘Child abuse’, ‘sexual assault’ against children, online ‘child pornography’, online ‘child exploitation’ and ‘cybercrime’, are all reported in different studies (Australian Institute of Health and Welfare 2007; Krone 2005a; Krone 2005b; Krone 2005c; Krone 2005d; Cashmore and Trimboli 2005; Duncan 2006; Keel 2004; Australian Bureau of Statistics 2005 (reissue)). However, this review was unable to locate any research assessing the relative proportion of internet related crimes against children to other sexual crimes.

⁵ For further discussion of commercialised leisure, see Chapter 10.

9 Mobile phones

The rapid spread of the mobile phone among teenagers both in the West and in North Asia has attracted the attention of a number of researchers (Goggin, G. 2006; Ito, M. & Okabe, D. 2006; Ling, R. & Yttri, B. 2002; Millwood Hargrave, A. & Livingstone, S. 2006). By the beginning of the new millennium, the overwhelming majority of children in their mid-teens living in Australia and other highly developed economies not only owned a mobile phone but the phone had become an important part of teenage identity formation and a key infrastructural support for contemporary teen culture (Downie, C. & Glazebrook, K. 2007; Goggin, G. 2006).

Security is the most frequently cited reason for parents giving their children a mobile phone handset (Millwood Hargrave, A. & Livingstone, S. 2006; Netsafe 2005). Parents believe that by maintaining perpetual contact with their children (Katz, J. & Aakhus, M. 2002), more or less regardless of location, they can extend the reach of parental monitoring.¹

Research suggests that the majority of teenage subscribers pre-pay phone bills. While this may often be a means by which parents limit their own expenditure, it is frequently justified as a practice that introduces children to responsible control of finances (Katz, J. & Aakhus, M. 2002; Ling, R. 2004). One consequence of this practice of pre-paying is that there is little billing information to guide parents (or, for that matter, researchers) about how mobile phones are actually used by teenagers (Anderson, Chris 2006; Kasesniemi, E.-L. & Rautiainen, P. 2002; Ling, R. 2004; Millwood Hargrave, A. & Livingstone, S. 2006).

Many researchers have commented that parents' inability to closely monitor mobile phone use—communication without surveillance—is an important reason for the popularity of mobile phones among teenagers. Weak parental monitoring of the uses of this device seems to be the reverse side of the coin to perpetual contact, creating the conditions for the mobile phone to play a key role in the elaboration of distinctly teenage cultural forms. It is also a form highly compatible with the development of 'bedroom culture', which in turn may be an inadvertent consequence of parents' growing anxiety about children's safety and security in public places (Millwood Hargrave, A. & Livingstone, S. 2006).

By far the greatest volume of literature on teenagers and mobile phones are studies of messaging practices of teenagers, especially the unexpected take-up of SMS text messaging services (and email via mobile phone in Japan) (Ito, M. & Okabe, D. 2006; Kasesniemi, E.-L. & Rautiainen, P. 2002; Ling, R. & Yttri, B. 2002). Messages can be sent and received discreetly, without attracting the attention of parents and teachers. Indeed, some research has found more advanced features of the handset are frequently used to identify or even screen out messages from parents (Ling, R. & Yttri, B. 2006).

Through messaging, teenagers initiate, maintain and dissolve intimate relationships with other teenagers. Some messages are considered so valuable that teenagers keep a journal of them to avoid them being lost as a result of SIM card memory constraints (Kasesniemi, E.-L. & Rautiainen, P. 2002). While messages are private and only occasionally shared with parents, key messages are shared with close peers and some chain messages are exchanged more broadly among peers.

The teenage messaging etiquette dictates that only a short time (around 30 minutes) may elapse between the sending of a message and getting a response. Being able to receive and send messages is a condition for participation in the spontaneously organised social life of the peer groups and ultimately a requirement for the membership of these social networks. Respondents say that they would be lost without their mobile phone and that being without a phone is a form of social exclusion (Kasesniemi, E.-L. & Rautiainen, P. 2002; Ling, R. & Yttri, B. 2002).

As a result of the close links between mobile phone ownership and peer group culture, teenagers indicate that the device is central to their identity (Nafus, D. & Tracey, K. 2002; Skog, B. 2002). Having a desirable handset is a source of social status. These considerations lead teenagers to develop the kind of culture where consumption is a critical element in the formation of identity (Fortunati, L. 2002)—an idea that is treated in greater length elsewhere in this review.

Millwood Hargrave and Livingstone quote a study by Reid et al. that examined the text use of nearly 1,000 respondents, using scales to measure personality attributes, ease of communication and the intimacy of resulting relationships. The age range of the sample, recruited via the internet, was between 12 and 67 years and had a mean age of 23.8 years. 'The study defined people as "texters" and "talkers" and noted that those who use text more often than talking face to face were more insular in terms of personality characteristics'. The ability to substitute text messages for face-to-face communication offered 'texters' an alternative way of developing and maintaining relationships. In a finding that mirrors Katelyn McKenna's work on relationships formed and maintained on the internet, the research suggests the relationships 'texters' form through messaging 'were more "profound" relationships than those experienced by "talkers"' (Millwood Hargrave, A. & Livingstone, S. 2006).

The upper limit of 160 characters permitted under SMS protocols has led to development of new forms of written expression, such as using the letter 'r' in place of 'are'; using the '@' sign to substitute for the word 'at'; and omitting spaces between words while differentiating between them by alternating between upper and lower case text (Bryant, A., Sanders-Jackson, A. & Smallwood, A. 2006; Grinter, R. & Eldridge, M. 2003; Ling, R. 2005). While claims can be made for linguistic innovation and for 'new literacies', as yet no one has undertaken research that demonstrates that proficiency in composing SMS text messages is associated with improved conventional literacy or enhanced school performance. However, it is equally true that, as yet, there have been no demonstrated adverse effects on literacy or schooling associated with proficiency in texting.

Another theme in the literature on children and mobile phone is child protection. Concerns about children's exposure to illegal content, bullying and financial exploitation have been raised.

The best indication of the prevalence of mobile phone bullying come from a 2005 study conducted in New Zealand high schools which found that 23 per cent of phone users reported that they had received an offensive abusive or threatening text or picture on a phone. A further 14 per cent reported that they had sent an abusive or threatening message or picture (Netsafe 2005).

There have been a number of new items reporting this kind of bullying (*ABC News Online* 2005; *textually.org* 2004). The industry peak organisation, the Australian Mobile Telecommunications Association, has responded to complaints about mobile phone bullying by issuing a pamphlet on the subject, offering help tips about how to prevent or respond to mobile phone bullying (Australian Mobile Telecommunications Association, 2005).

Successive generations of mobile phone networks have provided the basis for greater convergence, where multiple products—computers, modems, digital cameras, MP3 players and games consoles—come together to form one product with the advantages of all of them. A current example of this convergence process is the 3G mobile phone. Consequently some of the concerns around children’s use of mobile phones revolve around music, video, games and internet content and duplicate the concerns discussed under these headings elsewhere in this review.

Now that the mobile phone can provide a direct mode of access to the internet, this also raises the possibility of paedophile grooming of adolescents migrating from chat room sites to face-to-face meetings. When internet capability is combined with spatial location, using the 3G mobile phone’s global positioning system (GPS), the possibility of new threats to child protection can be imagined, although currently the incidence of contact with paedophiles (who are outside the circle of those related to or known to the child) is low. (For a discussion of sexual crimes against children and the currently available research on their relation to ‘networked’ media use, see Chapter 8).

There is now some publicly expressed concern about bullying using mobile phones, especially the practice (reported in Britain) of ‘happy slapping’, where the bully assaults the victim while an accomplice videos the attack on a mobile phone to transmit this file by email or MMS as part of bullying process (Brough, R. & Sills, J. 2006; Campbell, M. 2005). The incidence of this kind of phone bullying is substantial but not universal.

The Netsafe study in New Zealand reports that 16 per cent of those no longer using a mobile phone did so because they had had their phone stolen. Around a fifth of surveyed children aged 9–19 years in Britain reported that their mobile phone had been damaged or stolen (Millwood Hargrave, A. & Livingstone, S. 2006).

Parents report concerns about financial exploitation of younger people. Examples of unscrupulous manipulation of juveniles’ financial inexperience include signing them up for premium subscription services, ringtones and games (Millwood Hargrave, A. & Livingstone, S. 2006).

Summary

Research indicates that mobile phones have become a central artefact in the development of contemporary teen culture and most teenagers regard their phone as a key to their social life and an important element of their identity.

Parents’ motivation in giving their children mobile phones is most often found to be security—the idea of perpetually being in contact with their children regardless of location or time of day. However, communication without surveillance is an important reason for the popularity of mobile phones among teenagers.

In addition to talking on the phone to peers, children and teenagers initiate and maintain personal relationships with others using text messaging. Text messaging has developed into a distinct linguistic form.

Sometimes children and young people receive offensive or bullying messages on their phones, or are offered enticing but expensive services, however the incidence of reported serious emotional or psychological harm associated with phone use is low.

¹ Ironically, 80 per cent of 10–11 year-olds in the UK thought they and not their parents had initiated the purchase (Davie, R., Panting, C. & Charlton, T. 2004; Millwood Hargrave, A. & Livingstone, S. 2006).

10 The consumer socialisation of children

This chapter examines several key themes in the research literature dealing with children and consumer culture. ‘Consumer socialisation’ refers to the concept of providing children with a group identity through consumption of brands. Through exposure to direct and indirect advertising and marketing practises across all media platforms children are socialised as consumers.

The research literature discusses a range of influences associated with the consumer socialisation of children and the starting point here is a recent review of twenty-five years of research on consumer socialisation of children (John, D.R. 1999). The role of children’s developmental stages in their ability to analyse persuasive intent in marketing discourse, the role of social development in children’s identification with ‘brands’, for example, how brands become symbolically important to children and how the ownership, display and knowledge of brand ‘meanings’ forms part of group identities, and marketers’ use of children’s developmental progression to tailor promotions that are designed to foster lifelong brand loyalty are discussed.

This chapter also examines indirect product marketing through the relationship between producers of children’s merchandise and the producers of children’s screen entertainment. This relationship may occur in the context of the placement of toys and other products in children’s story and game worlds, ‘branded’ game and internet environments, and ‘viral marketing’ techniques.

Consumer development

In her review of research on consumer socialisation of children, Deborah Roedder John analyses the two main developmental trajectories influencing the socialisation of children. The first of these is a ‘cognitive development model’. The second is a ‘social development model’ (John, D.R. 1999). According to John, each stage of a child’s development is characterised by particular cognitive and social characteristics, and each of these stages has implications for socialisation into consumer society. The first of these is the perceptual stage (children aged 3–7 years); the second, the analytical stage (7–11 years). In the third stage, the reflective stage (11–16 years), children are cognitively and socially sophisticated enough to reflect on material found in advertising and promotions. According to John’s review, children shift from a naively simple and trusting attitude towards the world (including advertising and marketing manifestations of the world) to an increasingly complex and sceptical (or even eventually cynical) worldview. The study suggests that children in the first two stages are the most vulnerable and open to persuasion by marketing and branding (John 1999).

Pimentel and Reynolds (2004) refer to the (industry) goal of ‘consumer devotion’. The goal is for brands to supply such central emotional and symbolic meanings to young consumers that they will continue to be influenced by these meanings throughout life. The operation of ‘consumer devotion’ is exemplified by one adult respondent who stated: ‘I was raised on Colgate and it worked for me throughout my childhood and adult life and continues to work. I have believed this all my life and I impart this on to my children’ (cited in Pimentel, R. & Reynolds, K. 2004: 23).

John also reviews the literature on how children develop as consumers. In the perceptual stage, she summarises, children take appearance as reality and do not attempt to see what might lie ‘behind the scenes’. Children believe that ‘ads are truthful, funny, and interesting’, begin to associate brand names with product categories, see retail stores as simply a source of desired items, have limited awareness of information sources and value the surface features of possessions, such as having more of something (John, D.R. 1999). Children’s trust and desire, John argues, make them potentially vulnerable to marketing. In the analytical stage, children have ‘a more sophisticated understanding of the marketplace, a more complex set of knowledge about concepts such as advertising and brands, and a new perspective that goes beyond their own feelings and motives’. Product categories or prices are conceptualised in terms of functional dimensions, ‘products and brands are analysed and discriminated on the basis of more than one dimension or attribute, and generalisations are drawn from one’s experiences’ (John, D.R. 1999).

Though more sophisticated, children at this developmental stage are more receptive to the social side of marketing: belonging to a group becomes important, and group membership may easily be demonstrated through the possession and display of branded objects that come to mark the identity of the group. Marketers aim to provide the group with an identity through the consumption of appropriate items. John argues that this may be powerful for adolescents in the process of identity development (1999).

Some scholars have raised concerns about consumer socialisation and increasing materialism; others have argued that consumer socialisation can benefit social relationships. John argues that one ‘of the most enduring concerns about consumer socialization is that our culture encourages children to focus on material goods as a means of achieving personal happiness, success, and self-fulfilment’ (1999). This materialism of the young is generally seen as harmful. Other studies have argued that possession of consumer goods is necessary for negotiation of identity in the social world (Bonner, F. 2000), and for the establishment and maintenance of relationships and in this sense may be seen as beneficial (Corrigan, P. 1997).

Researchers have also studied the influence of children on adult purchasing decisions. Children are not necessarily the final objects of child-centred marketing. Studies have discussed the notion of ‘pester power’ or the ‘nag factor’ (Center for Science in the Public Interest 2003; Zanker, R. 1999), through which children influence adults to purchase the smaller child-relevant things they desire. However, there is some evidence that children can have an influence on the purchases of big-ticket items for the whole family, more so in the earlier stages of decision-making (John, D.R. 1999). In addition, Lindstrom (2004) suggests that even ‘when it comes to the choice of a car—more than 60 per cent of all tweens (8–14 year-olds) had a substantial influence on the final decision’. By targeting children, marketers may be able to gain some influence over the purchases made by adults, who might otherwise make different consumer decisions (Lindstrom, M. 2004).

Brand loyalty

In a recent quantitative study, market researchers examined children's spending power, media exposure, and identification with brand names. A survey designed to measure young people's attitudes toward and interaction with, various consumer socialisation agents and marketplace factors such as shopping and media use behaviours, was administered to 663 children (Dotson, M. & Hyatt, E. 2005). A factor analysis was then performed and promoting brand loyalty was found to be less predictable than marketers suppose.¹ The researchers argue that gender and peer variables, time spent alone after school, amount of television viewing, and amount of discretionary spending, all mediate purchasing decisions and brand awareness. Children who spent more time after school apart from adult mediation, either shopping or watching TV, were more likely to be socialised to brand awareness. Children with more discretionary funds were more likely to purchase products (Dotson, M. & Hyatt, E. 2005). Though an accepted methodology in market research literature, it should be noted that results obtained by factor analysis are necessarily more hypothetical than those obtained when all variables can be observed directly.

Toys and children's culture

In his seminal, multi-disciplinary study, which included content and industry analysis together with analysis of children's play styles and cultural practices, Stephen Kline investigated the influence of the toy industry on culture produced for children (Kline, S. 1993). The study examined marketing addressed to children through both direct advertising and through the influence of the toy industry on the design and production of children's screen entertainment. The study argued that this influence has resulted in reduced quality and diversity in the production of US children's animation and narrative.²

Licensing of 'brand' names associated with successful children's book and media texts and characters for the purposes of general merchandise and cross-platform adaptations (such as games) has also been researched. Branded 'spin-off' merchandise includes DVDs, games, books (movie tie-ins), magazines and, of course, toys (Fleming, D. 1996). Fleming's study examined the 'narrativisation' of toys in children's screen culture: the way in which products claim a place in children's 'story' repertoires. Both Kline and Fleming draw attention to the crucial economic relationship between merchandising and the commercial viability of children's screen entertainment production. The nature of this relationship may lead to community anxieties about the 'commodification' of children's entertainment fiction.

A more recent study reviews the growth in branded licensed merchandise for children inspired by books (Booth, E. & Hayes, D. 2005). The study argues that literary fiction is an art form that has always had a close relationship with the market, and that the full commercial value of children's books lies in the potential for interpreting their content and characters into diverse product categories. Another positive interpretation of the cross-platform commercialisation of cultural production is found in a recent book by Henry Jenkins (Jenkins, H. 2006c). Jenkins examines the way in which 'convergence' impacts on audiences, producers and content, arguing that recent media franchises like *Survivor*, *The Matrix* and *American Idol*, can make use of the new participatory culture of consumers for (industry) success and product exposure, and to facilitate increased pleasure on the part of users.

Internet marketing

In their study of children and computers, Wartella and Jennings (2000) show that ‘similar promises and concerns have accompanied each new wave of media technology... films in the early 1900s, radio in the 1920s, and television in the 1940s’. They suggest that there are regularly recurring cycles of praise and blame: ‘In general, proponents of media innovation argue that the new technology benefits children by opening up new worlds to them, while opponents argue that new media might be used to substitute for real life in learning ethical principles, undermining children’s morality and causing them to engage in illicit sexual and criminal behavior’. Their study argues that interactivity provides two things that at first sight appear entirely positive: a sense of community through interaction with others and a sense of control through the use of problem-solving software; however these communities are also vehicles for product marketing (Wartella, E. & Jennings, N. 2000).

Other studies have examined the phenomena of ‘branded environments’ (Montgomery, K. 2001) and the operation of covert ideology, or ‘hidden persuaders’, in product placement across a range of media and services (Schor, J. 2006). The term branded environments refers to internet communities organised under the auspices of a branded product: the boundaries and content of the interactive world are set by the brand, which becomes the ultimate mediator of relations between members of the community. As one advocacy publication argues, by ‘creating Web sites specifically for kids, companies can appeal to children early to foster brand loyalty. A key component of branded environments is the use of “advergimes”, or Internet games that feature specific products. Advergimes are very popular with children and, as such, are highly appealing to advertisers’ (Children Now 2005). Buying advertised products may lead to special privileges within the relevant branded space.

Research has also examined the online cultural exchange centred around toys (Buckingham, D. & Sefton-Green, J. 2004; Ito, M. 2006; Sefton-Green, J. 2004). Pokemon cards have been cited as the first major children’s collection object marketed through the internet, bringing thousands of new customers to the online auction and shopping website eBay (Seiter, E. 2005). Seiter’s study examines the relationship of toys and product marketing via the online role-playing game Neopets. The ‘persistent multiplayer online universe’ in this game is called Neopia and ‘has an inflation rate, a stock market, and possibilities for fraud. Pets hold bank accounts and can earn interest or buy stocks’ (Seiter, E. 2005). Points in the game may be gained through games of chance such as poker and roulette, while games points can also be gained through looking at advertising on the site: ‘a visit to a comparison shopping website, in which one required task is to get prices for three different electronic devices (digital cameras, MP3 players, and DVD players, for example) can earn a player 1,650 points’ (Seiter, E. 2005). Seiter sees these practices as akin to recruiting the next generation of gamblers, concluding that players of Neopets learn to take care of their pets, but in an atmosphere structured through consumerism and marketing.

The community aspect of online life also allows the flourishing of what Subramani and Rajagopalan (2003) call ‘viral marketing’ spread by ‘word-of-mouth’, which is the tactic of creating a process on an online network by which interested people can market to each other. ‘Viral marketing’ is clearly predicated on the trust that grows up between people on online communities:

Viral marketing is a powerful means for both marketers and recipients to benefit from the innate helpfulness of individuals in social networks. However, success hinges upon the recognition of the strong need for influencers to be viewed as knowledgeable helpers in the social network rather than as agents of the marketer (Subramani, M. & Rajagopalan, B. 2003).

Turow (2003) shows another way in which the trust of children may be seen to be exploited for gain by marketers over the internet. The web permits direct relations between children and marketers, and sophisticated online data gathering techniques allow complex consumer profiles to be generated. Turow notes that if even adults ‘freely give information about themselves to get information and material goods’ then children are likely to be more susceptible to the ‘naïve release of information to Web sites ... Take the example of a 14-year-old who reveals his parents’ favourite Web sites to a Web site for a “free” gift, not realising that his parents consider such data sensitive’ (Turow, J. 2003).

Chung and Grimes raise the issue of privacy for children occasioned by ‘datamining’ through information provided to web sites: marketers ‘mine’ blogs and forums written by children ‘for details about their private lives and consumer profiles’, by means of applications that sift through vast amounts of data looking for ‘otherwise non-obvious’ information, facts and/or relationships’. They see all this as a danger to the privacy and freedom of expression of children, and as risking the infringement of ‘children’s potential intellectual property rights and other authorship rights over the ideas, creativeness and cultural artefacts they continue to produce and distribute online’ (Chung, G. & Grimes, S. 2005).

Sex, advertising and children

Children may be exposed to advertising that appears to use sexuality as a marketing strategy. In a recent Australia Institute report, Rush and La Nauze (2006) argue that advertising and marketing may present children in a sexually suggestive way and seek to sell products to children using overt forms of adult sexuality. The study uses a content analysis methodology; effects on the audience are inferred from the nature of the media content itself, as in some of the studies on sexual media cited earlier in this review.³ Arguing from a developmental perspective, Rush & La Nauze (2006) suggest that the ‘slowly developing sexuality of children’ has been unnaturally hastened—leading to a rapid sexualisation, cultivated by electronic and print media images of clothing and cosmetics, in promotions targeted towards pre-teen children.

Examples of harm that may result as a consequence of early sexualisation suggested by the researchers include eating disorders, negative body image, increased attention-seeking and sexualised behaviour, the possibility of promoting sexual abuse and early onset of sexual activity, and preoccupation with sexualised appearances leading to displacement of activities that may provide more useful life skills (Rush, E. & La Nauze, A. 2006). Following Walkerdine (1999), Rush and La Nauze also argue for potential differences in effects due to socio-economic status. For example, they suggest that a sexualised body may be relatively more important as an element of capital, that is, what it can ‘get’ for you, for a working-class than a middle-class child. Potential harms, they argue, are greater for the working-class child, who may be lacking the protection of more extensive middle-class resources. As is the case with content analyses discussed earlier in the review, these effects are hypothesised from an analysis of the promotional discourse of the media texts, rather than measured in studies of how these texts are received by audiences.

The concept of cultural capital has been studied in relation to consumption practices. Other Australian studies argue that, in order to be integrated into consumer economies, all humans need in some sense to be socialised to consumption practices; for example, Corrigan argues that the historical tendency has been for consumption to spread to ever greater numbers of people, including children (Corrigan, P. 1997). This is a stance also favoured by industry bodies (Schor, J. 2006).

Summary

‘Consumer socialisation’ refers to the concept of providing children with a group identity through consumption of brands. Researchers suggest that children’s developmental stages affect their ability to analyse persuasive intent in marketing discourse, while their social development plays a role in children’s identification with ‘brands’.

Products can be promoted to children and adults through internet games and viral marketing techniques. In addition, there are opportunities for indirect product marketing through the relationship between producers of children’s merchandise and the producers of children’s screen entertainment.

Certain advertisements and other media content have been criticised for promoting unrealistic body images and allegedly representing children in a sexualised manner, while other researchers argue that socialisation through consumption practices facilitates social life in modern cultures.

The primary risk factors associated with marketing to children identified by researchers are age, gender and socio-economic status.

¹ Factor analysis is a statistical data reduction technique which is used to study the patterns of relationship among many dependent variables. It aims to discover something about the nature of the independent variables that affect dependent variables, even though those independent variables were not measured directly. Thus answers obtained by factor analysis are necessarily more hypothetical and tentative than is true when independent variables are observed directly. The inferred independent variables are called ‘factors’. Factor analysis is used in some of the social sciences, marketing and consumer behaviour research literature, and other applied disciplines, especially in those contexts where researchers seek to measure fundamentally unobservable variables such as intelligence and personality.

² In a long career arguing for quality Australian programming, Patricia Edgar has made similar points about the poor standard of imported US programming for children. See, for example, her recent personal and industry memoir (Edgar, P. 2006).

³ See chapters 4, 5, 6 and 8.

11 Influences of media on children's health

This chapter is written from the perspective of public and community health. Medical research has not experienced the same 'conversation' between research paradigms as that found in the social sciences. However, changing social conditions can be traced in the emergence of new concerns on the part of the research community. Topics of prominence in child health research formerly included socialisation and learning and tended to focus more on younger children. Recently, more prominence has been given to sexual behaviour and substance abuse, and adolescents have featured more centrally as research subjects. The contemporary prominence given to obesity in the medical literature on children reflects community and professional concerns about the 'epidemic' proportions this condition threatens to assume.

This review synthesises relevant research regarding the impact of electronic media, specifically television/video/DVD¹ and computer use (internet and games), on the health of children and adolescents. It considers in turn the associations between media used and overweight/obesity, physical activity, nutrition, substance use, eating disorders and body image, sexual behaviour, suicide and depression, and sleep. These health areas were chosen as they appeared to generate the most attention from researchers, as evidenced by the literature search. This chapter also outlines certain methodological issues of some studies reviewed.

It was apparent from the majority of the literature that the media is considered by most researchers to be a powerful force that imposes a major influence on the lives of young people. It was also evident that the bulk of this literature is harm oriented, with a lesser focus on potential benefits.

National Australian guidelines recommend that children spend no more than two hours per day using electronic media for entertainment, including television/videos/DVDs, computer games, and internet (Australian College of Paediatrics 1994). This guideline was drawn up by a working party at The Australian College of Paediatrics, and is based on empirical evidence. However, evidence suggests that many Australian children exceed this guideline (Australian Bureau of Statistics 2003). Current statistics indicate that at least 98 per cent of Australian children aged 5–14 years watch television, and it is by far their most popular leisure activity (Australian Bureau of Statistics 2004).

US data indicate that children spend more time watching television than engaging in any other activity except for sleep—including total time at school (Dietz, W. & Strasburger, V. 1991). Estimates vary as to how long Australian children watch television per day, but they average at just over two hours a day (AC Nielsen 1997; Australian Bureau of Statistics 2004; Hands, B. et al. 2004; NSW Department of Health 2002; Wake, M., Hesketh, K. & Waters, E. 2003).

Moreover, young people's access to the internet is steadily increasing and is rapidly becoming embedded in everyday life. The 2006 Australian Bureau of Statistics (ABS) *Children's Participation in Cultural and Leisure Activities* survey indicated that of the 2.7 million children aged 5 to 14 years in Australia, 92 per cent used a computer and 65 per cent used the internet (Australian Bureau of Statistics 2006). Given the widespread use of electronic media by children, it is crucial to examine what effect this might have on children's health and well-being.

Overweight/obesity and physical activity

Child obesity is increasingly being viewed as a global epidemic, and represents a major public concern given that obese children are at greater risk of developing morbidities including cardiovascular disease (Andersen, R. et al. 1998; Gortmaker, S. et al. 1996; Janssen, I. et al. 2005), high blood pressure (Andersen, R. et al. 1998), dyslipidaemia (Gortmaker, S. et al. 1996), type II diabetes (Robinson, T. 1999), and sleep apnoea (Saelens, B. & Epstein, L. 1998).

Prevalence of overweight and obesity is measured using the body mass index (BMI), a surrogate for adiposity that is calculated by dividing the individual's weight in kilograms by their height in metres squared. In adults, a BMI of 25 up to 30 is classified as overweight and a BMI of 30 or more is classified as obese. Children's cutpoints vary according to age; the International Obesity Task Force cutpoints recommended by the National Health & Medical Research Council for epidemiological use in Australian children correspond to these adult cutpoints. Various estimates suggest that five to nine per cent of Australian children are obese (Australian Institute of Health and Welfare 2003; Hands, B. et al. 2004). The aetiology of overweight and obesity is likely to represent a complex interaction between genetics and the environment but in simple terms, obesity results from energy intake exceeding energy expenditure.

Stratton, Conn and Smallacombe (2005) presented findings of a statistical analysis of information collected in the 2003 (ABS) *Children's Participation in Cultural and Leisure Activities* survey, focusing on children aged 5–14 years. It was reported that children who use a computer or internet at home, as well as those who spend some time playing computer games, are more likely to engage in organised sport outside school. However, children who watched 20–39 hours per fortnight of television were less likely to participate in sport. Those who watched more than 40 hours of television were even less likely to participate in sport (television was defined as 'watching television or videos'). Children spent many more hours watching television or videos than using the computer or internet or playing computer games. The authors suggest that if children were to spend as much time on the computer as they did watching television, a similar result would be likely. It should be noted that data were obtained for only organised sport; no information was collected for other types of physical activity, like physical play or walking.

Carter (2006) conducted a systematic review of current medical, public health, psychological and marketing research on topics related to childhood obesity and television viewing. The focus was on Australian data, with cross-sectional studies dominant. In regards to physical activity, an assumption in the literature was that children who watch less television are more physically active than those who watch more. However, Carter (2006) reports that most children merely substitute television viewing with other sedentary behaviour like reading, listening to music, talking on the phone, or playing games (Kaiser Family Foundation 2004).

Marshall et al. (2006) conducted a meta-analysis on empirical evidence of associations between television viewing and video/computer game use and physical activity. Reported associations between television viewing and physical activity were weak. However, in this analysis and the review by Carter (2006) there was an overwhelming reliance on cross-sectional data which restricts the conclusions that can be drawn (90 per cent of the samples reviewed in Marshall et al. were cross-sectional).² Furthermore, Marshall et al. (2006) outline other factors prevalent across the reviewed studies that may influence the effect size of the relationship; self-report of sedentary behaviours and physical activity; sizable variability in the criteria used for the assessment of television viewing and video/computer game use; and the sampling frame for recall varied. Also, reliability and validity were presented infrequently across studies.

Carter (2006) reports that an Australian cross-sectional study indicated that children who watch 20 hours of television or more per week, that is, nearly three hours per day, are twice as likely to be overweight or obese than children who watch less television (Wake, M., Hesketh, K. & Waters, E. 2003). This finding is replicated in a large-scale study of 34 countries in Europe and North America (Janssen, I. et al. 2005). Similarly, a number of American studies have found that children who watch four or more hours of television per day have a greater BMI than those who watch less than two (Andersen, R. et al. 1998; Gortmaker, S. et al. 1996). Marshall et al.'s (2006) analysis found that television viewing was consistently related with overweight, but the association was small. This result may have been influenced by methodological constraints including the assessment of body fatness across studies, which was primarily by proxy measures. Few studies reported whether they controlled body fatness measures for sexual maturity or age, and classifications for overweight and obese varied across studies.

REDUCING TELEVISION VIEWING TO PREVENT OBESITY

One study (Robinson, T. 1999) conducted a pilot randomised, controlled, school-based trial of reducing television, videotape, and video game use by 8–10 year old children in two American elementary schools to assess the effects on body weight. Early lessons for children involved self-monitoring and self-reporting of electronic media use to motivate them to reduce time spent on these activities. These lessons were followed by a television turn-off, where students were challenged to watch no television or videotapes and play no video games for 10 days. After the television turn-off, children were encouraged to follow a seven-hour per week budget. Additional lessons taught children to use viewing and video game time more selectively. Several final lessons enlisted children as advocates for reducing media use. Each household received an electronic television time manager to monitor and budget viewing time.

This was the first experimental study that showed a direct association between television, videotape, and video game use and increased body weight. Children reported the time they spent 'watching television', 'watching movies or videos on a VCR' and 'playing video games'. Compared with controls, the experimental group had small but significant decreases in BMI, triceps skinfold thickness, waist circumference, and waist to hip ratio. Relative to controls, the experimental group also had significant decreases in reporting of television viewing and meals eaten in front of the television. No differences were found for changes in physical activity or cardio-respiratory fitness. It is important to note that numbers in this pilot trial were small (192 students), the study involved children from only two primary schools, and the findings have not been replicated.³

In another randomised control trial examining television viewing, physical activity and obesity, Goldfield et al. (2006) compared an intervention group of overweight or obese children who were required to accumulate 400 counts of physical activity on a pedometer in order to earn one hour of television/VCR/DVD time, to overweight or obese control participants. The control group wore activity monitors but had free access to television. The intervention group demonstrated significantly greater increases in daily physical activity counts, minutes per day of moderate to vigorous physical activity, and greater reductions in minutes per day of television viewing compared to controls. Similar results have been found with normal weight youth (Epstein, L. et al. 2005). The authors also found that reductions in energy consumed in dietary fat were significantly related to reductions in weight and BMI in the intervention group.

In a major health economics modelling exercise, Haby et al. (2006) assessed the population health benefit and strength of evidence for 13 potential obesity prevention interventions in young people in Australia, including school-based education programs, community programs, hospital-based interventions such as laparoscopic adjustable gastric banding, and media-related interventions. The authors used the best available evidence, as judged by the project working group, to determine the health benefits gained from the interventions. Measures of health gains were disability adjusted life years (DALYS) saved over the child's lifetime and total age-specific BMI units across the population that could potentially be saved by the intervention. The study identified evidence for interventions whose associated health benefits were unlikely to be due to chance.

The intervention with the biggest population impact in this study was found to be 'reduction of television advertising of high fat and/or high sugar foods and drinks to children'. Although the individual impact of this intervention is small, the number of children potentially affected is large (since the study assumed that virtually all Australian children aged 5–14 years are exposed to television), leading to a larger population impact. The intervention with the biggest individual impact was laparoscopic adjustable gastric banding for morbidly obese adolescents. The study also noted that 'evidence supporting the reduction in TV advertising to children is less strong,' leading to the view that 'whereas the potential health gain is high, the certainty that it will be achieved if the intervention is implemented is lower.'

LONGITUDINAL ASSOCIATIONS BETWEEN TELEVISION AND BMI

The relationship between television viewing and BMI is further supported by a longitudinal study by Hancox and Poulton (2006). In New Zealand, 1,037 participants were surveyed every two years from age 3–15 years. It was found that the mean hours of watching television in childhood was associated with an increased BMI later on, and this association was stronger in girls. These results remained after adjusting for potentially confounding variables (socio-economic status and familial tendency to overweight). These results also remained after age 15 years. BMI was adjusted for BMI at age five years. This means that the researchers were able to control for participants with an early tendency to be overweight at the beginning of the television viewing period. It is worth noting that the long-term association between childhood television viewing and adult BMI was similar for male and female study members in a study by Hancox, Milne and Poulton (2004). In the same cohort, it was found that more television viewing during childhood and adolescence was associated with overweight, poor cardio-respiratory fitness, raised serum cholesterol and cigarette smoking in early adulthood.

INTERVENTION – THE EFFECTIVENESS OF ELECTRONIC MEDIA ON OBESITY AND PHYSICAL ACTIVITY

The VERB campaign, launched by the Centres for Disease Control and Prevention, is an intervention directed at obesity-related behaviour. VERB is a US media campaign designed to engage children aged 9–13 years in a healthy active lifestyle. The VERB campaign uses paid advertisements and internet activities in order to represent being physically active as ‘cool’/‘fun’, and as providing social opportunities, for example, the chance to ‘have a good time’ with friends). Reporting on the longitudinal study of VERB, Huhman et al. (2005) reported findings that particular subgroups of children, such as younger children (aged 9–10 years), girls, children whose parents had less than a high school education, children from densely populated urban areas, and children who engaged in low levels of physical activity at baseline, engaged in more weekly sessions of free-time physical activity than did children who were unaware of VERB. Also, as the children’s level of VERB awareness was incrementally higher, the children engaged in incrementally more free-time physical activity.

In summary, although almost all children and adolescents watch television and have access to computers, the amount of time spent watching television vastly supersedes time spent on computers.⁴ Reported associations between television viewing and general physical activity appear to be weak, but these reports are based on cross-sectional data, and studies with methodological flaws, which may influence the strength of the relationship. Furthermore, the evidence suggests that reducing television viewing leads to a reduction in weight/BMI, and this relationship is evident in randomised control trials and a longitudinal study. Lastly, the benefits of the media on physical activity are apparent in the VERB campaign.

Nutrition

Since 1985, the mean dietary energy intake of Australian children aged 10–15 years has increased by 7.5–11.7 per cent (Carter, O. 2006). Added sugars contribute around 12 per cent to the daily energy intake of Australian children, with soft drinks, followed by cordials, the biggest contributors for children aged three years and onwards (Somerset, S. 2003). Added sugars are defined as sugars, sweeteners, and syrups that are eaten or used as ingredients in foods, excluding sugars present in milk and fruit (Rennie, K. & Livingstone, M. 2007). Moreover, 93 per cent of Australian children bring at least one serve of energy-dense food to school with them each day, and the average is 3.1 serves per day (Sanigorski, A. et al. 2005). Evidence has shown that energy consumption has increased in line with rising levels of childhood obesity in the past two decades (Carter, O. 2006).

The average estimate suggests 10 (range 9–12) food advertisements appear per hour on Australian children’s television, with 80 per cent (range 74–99 per cent) of these being for energy-dense foods like fast foods, soft drinks, lollies, ice-cream, chocolates, and snack foods (Australian Divisions of General Practice 2003; Dibb, S. 1996; Hill, J. & Radimer, K. 1997; Zuppa, J., Morton, H. & Mehta, K. 2003).⁵ Advertisements may lead to misconceptions about the nutritional value of certain foods. A study of children’s television programming in the US revealed that 49 per cent of food advertisements had implicit messages that the food was nutritious or healthy (Kotz, K. & Story, M. 1994).

PURCHASING AND SNACKING

Carter (2006) reports that controlled studies have consistently shown that children exposed to advertising chose advertised products more frequently than children unexposed (Coon, K. et al. 2001; Pine, K. & Nash, A. 2003). Borzekowski and Robinson (2001) conducted a randomised control trial with preschoolers aged 2–6 years in which children viewed a popular cartoon either with or without embedded advertisements. Children were then asked to identify their preference from similar pairs of products, only one of which appeared in the advertisements viewed. It was found that children who were exposed to the advertisements were more likely to choose the advertised product than those who saw the same cartoon without advertisements. It took only one or two exposures to the 10–30 second advertisement to influence the children's short-term preferences. The greatest preference differences were for products that had two advertisements rather than those with one.

Numerous cross-sectional studies have indicated that children's television viewing is positively associated with a higher intake of dietary energy in the form of fat, sweet and salty snacks, and carbonated beverages (Coon, K. et al. 2001; Coon, K. & Tucker, K. 2002).

Matheson et al. (2004) were the first to examine how much food and what type of food children eat while watching television (viewing of television shows, movies, or video tapes). The sample comprised two groups US children: third-grade children (average age 8.6 years) and fifth-grade children (average age 9.6 years). The researchers found that children consume a substantial proportion of their daily energy intake while watching television. On weekends, more than a quarter of the children's daily energy consumption was consumed while watching television, and on weekdays, nearly 20 per cent of the children's daily energy consumption was consumed in front of the television. The percentage of energy from vegetables consumed during television viewing was significantly lower than that from vegetables consumed at other times during the day. The percentage of snacks consumed during television viewing was higher than the percentage of any of the meals consumed in front of television. In the third-grade sample, children who consumed more energy from fat while watching television had a higher BMI than did peers who consumed less high fat foods with the television on.

Caution should be taken in considering the direction of causality due to the cross-sectional nature of the studies. However, the following two studies employ a longitudinal and prospective design, respectively (a prospective design begins with a hypothesis of the presumed cause of an event, and then follows participants over time to the presumed outcome) (King, M. 2001). These studies also report a correlation between television and eating patterns.

Francis, Lee and Birch (2003) assessed a sample of girls at five, seven and nine years of age. It was found that girls from both overweight and non-overweight families who watched more television consumed more snacks in front of the television. In families where neither parent was overweight, television viewing was the only significant predictor of girls' increase in BMI. In these 'non-overweight' families, snacking patterns did not predict increases in BMI from age five to nine years. The authors suggest that the association of television and BMI in non-overweight families may be a result primarily of decreases in energy expenditure rather than influences on snacking patterns. In families where one or both parents were overweight, on the other hand, television did not directly predict increase in BMI, but it was indirectly related through snacking patterns. Girls from these 'overweight' families who watched more television were found to snack more frequently, and those who snacked more frequently had higher intakes of fat from energy dense snacks, which predicted their increase in BMI from five to nine years. The authors suggest that in families with a genetic propensity to overweight, television viewing may provide a context for snacking patterns that influence the

development of overweight. The finding that parental weight status was relevant to the effects of television viewing and snacking highlights the need for research to examine contextual family variables such as family dietary profiles, family activity patterns, and encouragement of activity.

Boynton-Jarrett et al. (2003) examined prospectively the link between television viewing and patterns of fruit and vegetable consumption in a sample of children with an average age of 11.7 years. Television viewing excluded videos and movies. Epidemiology evidence shows protective benefits of fruit and vegetable consumption against cardiovascular disease (Renaud, S. 2001), diabetes (Lindquist, C., Gower, B. & Goran, M. 2000), and various forms of cancer (Steinmetz, K. & Potter, J. 1996). Boynton-Jarrett et al. (2003) found that for each additional hour of television watched per day, fruit and vegetable consumption decreased after adjusting for anthropometric, demographic, dietary variables and physical activity. Although causality cannot be proved, there is no reason to expect that decreased fruit and vegetable intake could lead to increased television viewing. While the researchers attempted to control for relevant predictors of fruit and vegetable consumption, there may be unmeasured factors that influence dietary practices including individual habits/behaviours and social and environmental influences.

In summary, research has found that television advertising includes frequent messages aimed at shaping the nutritional beliefs, attitudes, and consumption patterns of young people, and little of this advertising promotes fruit and vegetables. Controlled studies have indicated that children exposed to advertising choose advertised products more often than those unexposed. Cross-sectional, prospective, and longitudinal studies have shown that more television viewing predicts increased energy consumption, and this can be linked to an increased BMI. Research also suggests that increased television viewing relates to less consumption of fruit and vegetables.

Substance use

TELEVISION AND SMOKING

Television programs depicting tobacco use may encourage adolescents to smoke through widespread portrayal of smoking on prime-time television, movies, music videos, and sporting events (Thompson, K. & Yokota, F. 2001). In a review of 81 G-classified films available for sale or rental in the US, 35 films (43 per cent) showed tobacco use with a mean exposure of 2.1 minutes per film (Thompson, K. & Yokota, F. 2001). In music videos, smokers are often portrayed as attractive, successful, influential, and in a positive social context (DuRant, R. et al. 1997). Thus, television may provide a means for indirect tobacco advertising. As discussed in Chapter 4, social learning theory posits that television can provide instruction in new skills or 'behavioural scripts' through observation of screened models. People perform the behaviour in anticipation of reward (Bandura, A. 1986). Thus, it is argued that television can provide young people with role models, and these role models may be seen as portraying smoking as personally and socially rewarding (Distefan, J. et al. 1999).

Gidwani et al. (2002) investigated longitudinally whether young people aged 10 to 15 years, with greater exposure to television viewing at baseline, exhibit higher rates of smoking initiation two years later. It was found that those who viewed five or more hours of television per day were six times more likely to initiate smoking behaviours than those who watched less than two hours. Furthermore, those who watched for four to five hours per day were 5.2 times more likely to initiate smoking than those who viewed television for less than two hours per day. Whilst the longitudinal design of this study means that it has less power to detect causal relationships than do experiments, the longitudinal design provides temporal sequence with television viewing measured two years prior to smoking initiation. It has also been reported that young people are more likely to be influenced by tobacco advertising than are adults (Arnett, J. & Terhonian, G. 1998; Centers for Disease Control and Prevention 2004).

On the reverse side, substantial evidence shows that counter-marketing, especially when combined with other programs, such as in schools or communities, is effective in increasing anti-tobacco attitudes and beliefs and decreasing the initiation and prevalence of tobacco use among adolescents and adults (Flynn, B. et al. 1994; Hopkins, D. et al. 2001). Counter-marketing aims to promote smoking cessation, decrease initiation, and lower exposure to second-hand tobacco smoke by countering pro-tobacco messages and influences and by increasing positive health influences and messages that 'de-normalise' smoking (Hopkins, D. et al. 2001). This often involves media advocacy, press releases, paid advertising, sponsoring of health promotion activities, replacing tobacco industry promotions and sponsorships of events, distributing anti-tobacco merchandise, and branding of anti-tobacco campaigns (Farrelly, M., Niederdeppe, J. & Yarsevich, J. 2003). Effectiveness depends on sufficient frequency, duration and reach (Centers for Disease Control and Prevention 1994).

INTERNET AND SMOKING

The internet is becoming a new battleground between tobacco control advocates and pro-tobacco forces. The internet can facilitate youth smoking by providing potential access to tobacco products through purchases online, and by offering content that glamorises smoking lifestyle and culture, particularly through websites and chat rooms. The Center for Media Education (CME) in the US, in assessing tobacco-related websites, concluded that sites with the greatest youth appeal were those devoted to culture and lifestyle (Ribisl, K. 2003). These sites contain pictures of celebrities smoking, smoking tips, and chat rooms or discussion boards, forming a pro-smoking community. In contrast, youth smoking is discouraged on internet grassroots advocacy and counter-marketing websites. While these methods show promise, there is a lack of research evaluating their effectiveness (Ribisl, K. 2003). Ribisl (2003) asserts that research on understanding tobacco-related internet content is still in its infancy, longitudinal studies are needed to monitor the proliferation of pro-tobacco websites, and research into the extent to which young people are exposed to tobacco-related internet sites is required.

ALCOHOL

Cross-sectional studies have shown a link between television and alcohol use with exposure to alcoholic advertisements and television programming being related to positive beliefs about alcohol consumption (Atkin, D., Hocking, J. & Block, M. 1984; Grube, J. & Wallack, L. 1994). A longitudinal association between alcohol consumption at age 18 and alcohol-related messages at the ages of 13 and 15 has also been reported (Connolly, G. et al. 1994). Findings showed that girls who watched more hours of television at 13 and 15 years drank more wine and spirits at age 18 than those who watched fewer hours of television. In Australia, Carroll and Donovan (2002) applied the voluntary standards of the *Alcohol Beverages Advertising Code* to six websites for alcoholic products in Australia. They noted that the internet provides an opportunity for alcohol marketing targeted at young people, and some alcohol-related websites would be in breach of the code if it applied to the internet. These websites frequently included sexual innuendos associated with consumption, music downloads, attractive screen savers, competitions to win concert tickets, music CDs and branded merchandise, associating alcoholic beverages with extreme sports, encouraging young women to extend their personal boundaries ('It's time for a Wicked Party. Leave your morals at home'), and associating the product (Wicked Wines) with these gender-related challenges. Carroll and Donovan (2002) conclude that web marketing practices of alcoholic beverage companies should be monitored and a code of practice developed to regulate alcohol promotion on the web.

The Center for Media Education (CME) examined 77 beer, wine, and spirit sites (Center for Media Education 1998). It was found that 62 per cent of the sites contained at least one element considered by CME to be appealing to youth, with most sites using around three of these elements. The most common youth appeal elements identified were use of cartoons or motion video, branded merchandise, games or contests, youth-oriented language or slang, and use of sound or downloadable sound. It also appeared that beer and spirits sites were much more appealing to young people than wine sites.

In summary, cross-sectional and longitudinal evidence indicates that more television viewing is related to increased rates of smoking initiation and increased rates of alcohol use later on. Studies have found that alcohol-related websites contain content that is attractive to young people, and more research is needed to explore the effects of the internet on substance use behaviours. The effectiveness of the media is apparent in counter-marketing techniques that have been shown to decrease the initiation and prevalence of tobacco use among adolescents.

Eating disorders and body image

Depending on the methodology used, the reported prevalence rate for anorexia nervosa and bulimia nervosa among adolescent females ranges from around 2.4–5 per cent (Jones, J. et al. 2001; Patton, G., Coffey, C. & Sawyer, S. 2003) and is 0.48 per cent among girls aged 15 to 19 years for anorexia alone (Austin, S. 2000). While males comprise only around 10 per cent of anorexia cases, both genders are experiencing a rise in prevalence of eating disorders (Modan-Moses, D. et al. 2003).

Martinez-Gonzalez et al. (2003) found a positive association between the incidence of eating disorders and weekend television viewing in a prospective population based cohort of females aged 12 to 21 years.⁵ Those high at risk for eating disorders (based on the DSM IV)⁶ were most likely to read girls' magazines or listen to radio programs. Vaughan and Fouts (2003) found that among 12 year-old girls, those who had a decrease in eating disorder symptomatology had significantly decreased their exposure to both television and fashion magazines.

In a meta-analysis of 25 controlled experiments on the effects of media images (television, movies, magazines) on body image, Groesz et al. (2002) found that viewing thin media images was more predictive of lower body satisfaction than viewing images of either average sized models, plus sized models, or inanimate objects. The effect was stronger for participants aged 15 to 19 years. The authors concluded that the media promotes, if not establishes, a standard of beauty that leads many females to feel badly about their weight and shape.

Tiggemann (2005) sought to investigate the role of television watching in a more detailed way than had been done in previous research, by not only assessing television exposure, but by breaking down the basis of content, and exploring uses and gratifications derived from television viewing. The sample comprised 1,452 students from years 8–11 in 13 South Australian high schools. It was found that the total television time was not related to body image variables for boys and girls. However, the time spent watching a particular genre, soap operas, was related to internalisation of cultural beauty ideals and drives for thinness in both girls and boys, and further with drive for muscularity in boys. Soap operas are distinguished from other genres in terms of their sense of 'realness', although content analysis shows substantial divergence from real life (Barbatis, G. & Guy, Y. 1991). Nevertheless, this realness has a powerful influence in promoting schemata that appearance and thinness (or muscularity) is vital to success.

In addition, it was found that watching television for the expressed purposes of escaping 'negative affect' (emotions/moods), or for learning about social norms, was correlated with negative body image. Watching television to escape negative affect was used to curtail boredom, sadness, and 'to forget about school', while watching television for 'social learning' purposes was used as a source of behavioural and appearance standards ('to learn how people my age behave'). In terms of gender differences, girls watched more for social learning and boys for entertainment, which is consistent with the greater overall body concern among girls (Paxton, S. et al. 1991). One important methodological issue is the correlational design of the study. In addition, studies which deal with variables such as emotion, self-image and intention must rely heavily on self-reporting of subjective states by participants.

THE INTERNET AND EATING DISORDERS

Up to two-thirds of adolescent girls seek health information online⁷ (Rideout, V. 2002). Of these internet health searchers, nearly half are looking for ways to lose weight and nearly one quarter are seeking information about eating disorders (Roberts, D. et al. 1999). Adolescent-developed websites that promote anorexia and bulimia are becoming increasingly prevalent. These pro-eating disorder sites are communities of individuals who engage in disordered eating practices and use the internet to discuss their activities. Most share similar content including 'thin-spiration' (images of thin and cachectic women), poetry, weight-loss advice, methods for avoiding detection by family and health care providers, forums, merchandise, and links to other related sites (Chesley, E. et al. 2003). Conversely, pro-recovery sites, which are far less numerous, promote recovery from eating disorders.

In 2003, there were around 500 pro-eating disorder sites in existence, outnumbering pro-recovery sites 5:1 (Keski-Rahkonen, A. & Tozzi, F. 2005). Little is known about the effects of pro-recovery sites. One study reported that sites provide support in the initial phase of recovery, but may impede process at later stages (Murphy, R. et al. 2004). Furthermore, content displayed on 15 pro-recovery and information sites for patients with eating disorders were found to be of 'generally poor quality'. However, one study that assessed postings on an eating disorder support forum reported that some visitors feel more able to express themselves online and find them more supportive than face-to-face therapy (Wastrom, M. 2000).

Wilson et al. (2006) conducted a cross-sectional study involving patients with eating disorders (aged 10 to 22 years) on the associations between pro-eating disorder and pro-recovery sites on health and quality of life. It was found that 41 per cent of patients visited pro-recovery sites, 35 per cent visited pro-eating disorder sites, 25 per cent visited both and 48.7 per cent visited neither. While visiting pro-eating disorder sites, 96 per cent learned new weight loss or purging techniques. However, 46.4 per cent of pro-recovery site users also learned new techniques. Pro-eating disorder site users did not differ from non-users in terms of health outcomes, but spent less time on school work and had a longer duration of illness. Pro-eating disorder and pro-recovery site users were hospitalised more than users of neither websites.

In summary, prospective and cross-sectional evidence exists for a link between television viewing and incidence of eating disorder symptomatology. Furthermore, controlled experiments have reported that viewing media images of 'thinness' results in decreased body satisfaction, and there is cross-sectional evidence that the soap opera genre is related to reduced body satisfaction. Some evidence exists for pro-eating disorder websites impeding illness recovery, while the effectiveness of pro-recovery websites is unclear. More research is needed to investigate the effects of both pro-eating disorder and pro-recovery websites.

Sexual behaviour

An early onset of sexual activity in young adolescents has been connected to numerous health issues, including the decreased likelihood of taking appropriate precautions (Felton, G. & Bartoces, M. 2002), an increased risk of unplanned pregnancy (Wellings, F., Nanchahal, K. & Macdowall, W. 2001), and contracting a sexually transmitted disease (Abraham, C. et al. 2003). Data also suggest that sexually active adolescents are at higher risk for depression and suicide, and early sexual experience has been linked to behaviours such as alcohol, marijuana, and other drug use (Orr, D., Beiter, M. & Ingersoll, G. 1991).

Escobar-Chaves et al. (2005) performed a systematic review on the effects of mass media on sexual attitudes and behaviours of adolescents 11 to 19 years of age. In terms of content, programs mostly watched by adolescents in 2001–02 had 'unusually high' amounts of sexual content compared with television as a whole, with 83 per cent of programs popular with adolescents having sexual content and 20 per cent containing explicit or implicit intercourse. On average, each hour of programming popular with adolescents had 6.7 scenes that included sexual topics. In terms of effects, the authors reported that most of the data was dated, few examined the effects of mass media on adolescent sexual behaviours and attitudes, and they were limited in generalisability by their cross-sectional designs, limited sampling designs and small sample sizes. However, one study (Collins et al, 2004) was reported that examined the relationship over time between television and sexual behaviours and attitudes.

Collins et al (2004) conducted a national (US) longitudinal survey in 2001 and a follow-up in 2002 of 1,792 adolescents aged 12 to 17 years. A statistically significant finding was reported between television viewing and sexual behaviour. Adolescents who viewed more sexual content at baseline were more likely to initiate intercourse and progress to more advanced non-coital sexual activities during the subsequent year, controlling for respondent characteristics that might otherwise explain these relationships. Exposure to television that included only talk about sex was associated with the same risks as exposure to television that portrayed actual sexual behaviour. The authors also reported that watching sex on television may hasten adolescent sexual initiation as those who watched more than average amounts of sexual content behaved sexually like adolescents nine to 17 months older, but watched only average amounts of sex on television. Similarly, 12 year-olds who watched the highest amount of sexual content displayed the same sexual behaviours as the 14 to 15 year-olds who watched the least.

In summary, the majority of studies reviewed in assessing a relationship between sexual content and sexual behaviour were cross-sectional and exhibited methodological flaws. However, longitudinal evidence indicated that watching more sexual content was linked to an increased likelihood of initiating intercourse, and may hasten sexual behaviour.⁸ Additional high quality evidence is needed to support this reported link.

Suicide and depression

There are more than 100,000 internet websites that deal with methods of committing suicide (Dobson, R. 1999). Some of these sites are very graphic and may contain copies of suicide notes, death certificates and colour photographs displaying suicidal acts. It has been reported that young people may be more likely to be influenced by the internet to commit suicide than older people, as young people have a higher incidence of risk-taking behaviour, co-morbid substance abuse and depressive disorder. Information on the internet includes the best way to point a gun into the mouth for maximum effect and messages supporting suicide or encouraging individuals to go through with it (Alao, A. et al. 2006).

Firm evidence is lacking regarding the possible link between the internet and suicide and depression, mainly because most studies are cross-sectional. A longitudinal study by Kraut et al. (1998) in which families were given computers and instructions on internet use, found that after one to two years, increased use of the internet was associated with decreased family communication and reduced size of local social circle. In addition, the participants experienced increased loneliness and depression. Increases in loneliness and decreases in social support were particularly pronounced for the young people in the study. However, later research by Kraut and colleagues have not replicated the earlier findings (Bessi re, K. et al. 2004; Cummings, J., Lee, J. & Kraut, R. 2006).⁹

Conversely, the internet can aid in the evaluation, treatment, and prevention of potentially suicidal patients. Regarding evaluation, self-rating scales can be accessed on the internet. The use of email to communicate with patients can overcome physical constraints or communication impairments, and may be acceptable to individuals with trust issues, fears of being labelled, or who experience delusions. Computer-mediated counselling may protect anonymity, decrease self-awareness, and avoid stereotypes. The internet may prevent suicides through such sites as 'The Samaritan', which specialises in crisis intervention (Alao, A. et al. 2006).

In summary, there is a lack of high quality research studies into the effects of using the internet on suicide and depression. However, evidence from one longitudinal study did report a link between increased use of the internet and increases in loneliness and decreases in social support. In contrast, the internet has the potential to help suicidal patients through increased ease of communication, counselling, and intervention.

Sleep and television

Studies have reported that television viewing habits affect children's sleep quality. Owens et al. (1999) found that television viewing was associated with sleeping difficulties, bedtime resistance, sleep-onset delay, sleep anxiety, night wakings and shortened sleep duration in children aged 4–10 years. Also, Van den Bulck (2004) reported that heavy television exposure was associated with shortened sleep length. In addition, children who had a television in their room slept less than other children. Another study (Paavonen, E. et al. 2006) found that in children aged 5–6 years, active television viewing and passive television exposure were related to sleep difficulties, especially sleep-wake transition disorders and overall sleep disturbances. Watching television alone, watching television at bedtime and active viewing of adult television programs were related to sleeping difficulties.

Reasons for television-viewing habits impacting on sleep include television simply displacing sleep time; the time spent by the child watching television may substitute for other more active pursuits (like playing outside, playing sport), resulting in poor-quality sleep; the content of the television programs viewed may be violent and/or stimulating, resulting in difficulty falling asleep and/or night wakings related to anxiety; and parental television-viewing habits and attitudes about television (Owens, J. et al. 1999). Reasons for the effects of passive exposure on sleep may result from an increased risk of children coming in contact with violent content, whereas the contents of active viewing are probably more often controlled by parents. Passive exposure is where the television is on in the 'background', whereas in active viewing, the child specifically watches the television (Paavonen, E. et al. 2006). In addition, children, especially young children, are not always able to control the stimuli they receive from television. Thus, they may have difficulty discriminating between fantasy and reality in program content, and be frightened or disturbed by it in ways their parents might not predict (Paavonen, E. et al. 2006).¹⁰

While the above studies were cross-sectional and therefore warrant caution, more robust evidence comes from a longitudinal study by Johnson et al. (Johnson, J. et al. 2004). The authors reported that participants who watched three or more hours of television per day during adolescence were significantly more likely to experience frequent sleep problems by early adulthood.

In summary, cross-sectional and longitudinal evidence has linked television viewing with impaired sleeping in young people. These effects are not only evident for actively watching television, but also when passively exposed.

Summary

This chapter has examined research regarding the impacts of electronic media on the health of children and adolescents in terms of obesity and physical activity, nutrition, substance use, eating disorders and body image, sexual behaviour, suicide and depression, and sleep.

It is evident from a wealth of literature that media content and use may influence the way young people perceive their environment, their bodies, their relationships, and various risk taking behaviours. Media-consumption habits in young people are associated with numerous adverse health outcomes relating to overweight and obesity, poor dietary intake, alcohol and tobacco use, early sexual debut, eating disorders and body dissatisfaction, depressive symptomatology, and sleeping difficulties. Although these associations vary in strength, they are generally consistent across studies. One research study finds that reductions in food advertising have potential to benefit current obesity levels.

Conversely, media also has the potential to enhance young people's health and behaviour. Media has the potential to promote physical activity through intensive mass media campaigns, and pro-recovery eating disorder websites may have the potential to help young people with eating disorders, but much more research is needed into their effectiveness. Counter-marketing is effective in decreasing the initiation and prevalence of tobacco use. Media may also have the ability to help suicidal patients through increased ease of communication, counselling, and intervention.

More robust evidence is needed to investigate the effects of television on physical activity and sexual behaviour, and the influence of the internet on substance use and suicide and depression.

¹ Where authors have specified the type of television viewing studied, i.e. free-to-air television, all television viewing (including subscription television), DVD/video viewing, this will be reported.

² In the medical literature, this type of study design is rated as providing 'Category C' level of evidence (within a framework in which Level A provides the strongest level of evidence and Level D the weakest).

³ However, following Robinson, Stephen Kline (Kline, S. 2005) conducted a similar intervention experiment for educational purposes, as reported in Chapter 2. It reported significant increases in physical activity during the monitoring period when children followed a reduced screen time budget.

⁴ The *Generation M* study, by the Kaiser Family Foundation, conducted a survey of media use using a US nationally representative sample of more than 2,000 young people aged 8–18 years of age (Roberts, D., Foehr, U. & Rideout, V. 2005). Television was defined as 'television, videos/DVDs (both self-recorded and commercially produced) and movies—that is, all audio-visual systems that deliver content that does not depend on directive responses from the viewer'. Computer use included six recreational activities: games, web sites, chat rooms, emails, instant messaging, and graphics (i.e. PowerPoint). The average daily time spent watching television was 4.15 hrs (8–18 year-olds), while the average daily time on the computer was 1.02 hrs (8–18 year-olds).

⁵ A cohort study is a form of longitudinal study used in medical and social science research. In the former, it is typically used to gather evidence to refute the existence of a suspected association between a suspected cause (e.g. TV viewing) and disease (e.g. eating disorders). The cohort is identified before the appearance of the disease under investigation, and the study group(s) members are observed over a period of time to determine the frequency of new incidence of the disorders among them. A prospective cohort study defines the groups before the data is collected, while a retrospective cohort does so after the data collection. Prospective studies usually have fewer potential sources of bias and confounding than retrospective studies.

⁶ Diagnostic and Statistical Manual of Mental Disorders

⁷ Generation Rx.com is a US nationally representative, random sample telephone survey of 1,209 young people aged 15–24, with an over-sample of 200 non-white respondents. The data were weighed by gender, age, race, and region, to ensure results are representative of youth aged 15–24. 1072 respondents were identified as 'online youth' (those who have ever gone online) and 820 identified as 'online health seekers' (those who have looked up health information on the internet). The margin of error is plus or minus 2.9 percentage points for the total sample, plus or minus three percentage points among the online youth, and plus or minus 3.5 percentage points among the online seekers.

⁸ See Chapters 4 and 8 for further discussion of factors that mediate access to sexual content.

⁹ See also the section on the 'social net' in Chapter 8.

¹⁰ See also the discussion of children's fright responses to television in Chapter 4. Cantor and colleagues also mention sleep disturbances in the research reviewed in that context (Cantor, J. 2001, 2002; Cantor, J., Wilson, B. & Hoffner, C. 1986; Harrison, K. & Cantor, J. 1999; Valkenburg, P., Cantor, J. & Peeters, A. 2000).

12 References

- ABC News Online 2005, 'Mobile phone group launches anti-SMS bullying campaign', *ABC News Online: Sci-Tech*, no. 6 February 2005, viewed 12 May 2007, <http://abc.net.au/science/news/scitech/SciTechRepublish_1296864.htm>
- Abraham, C., Conde-Glez, C., Cruz-Valdez, A., Sanchez-Zamorano, L., Hernandez-Marquez, C. & Lazcano-Ponce, E. 2003, 'Sexual and demographic risk factors for herpes simplex virus type 2 according to schooling level among Mexican youths', *Sexually Transmitted Diseases*, vol. 30, no. 7, pp. 549–55
- Abramson, B. 2002, 'Country music and cultural industry: mediating structures in transnational media flow', *Media, Culture & Society*, vol. 24, no. 2, pp. 255–75
- AC Nielsen 1997, *Australian television facts*, AC Nielsen, North Sydney (AUST)
- Airo-Farulla, G. 2001, 'Regulating the internet: strategies for control', *Media International Australia incorporating Culture and Policy*, vol. 101, pp. 6–8
- Aisbett, K. 2000, *20 years of C: children's television programs and regulation 1979–1999*, Australian Broadcasting Authority, Australian Children's Television Foundation, Australian Film Finance Corporation, Sydney
- Alao, A., Soderberg, M., Pohl, E.L. & Alao, A.L. 2006, 'Cybersuicide: review of the role of the internet on suicide', *CyberPsychology & Behavior*, vol. 9, no. 4, pp. 489–93
- Alexander, A. 1994, 'The effect of media on family interaction', in D. Zillmann, J. Bryant & A.C. Huston (eds), *Media, children and the family: social scientific, psychodynamic and clinical perspectives*, Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 51–7
- Alexander, A. & Hanson, J. 2006, *Taking sides: clashing views in mass media and society* 9th edn, McGraw-Hill/Dushkin, Guildford, Conn
- Allen, A. 2001, 'Pornography and power', *Journal of Social Philosophy*, vol. 32, no. 4, pp. 512–31
- Alvermann, D. (ed.) 2004, *Adolescents and literacies in a digital world*, Peter Lang, New York
- Amici Curiae 2002, No. 02-3010, United States Court of Appeals for the Eighth Circuit: Brief Amici Curiae of thirty-three media scholars in Interactive Digital Software Ass'n, et al. v. St Louis County, et al. on appeal from a Judgment of the United States District Court for the Eastern District of Missouri, Eastern Division September 24, 2002, National Coalition Against Censorship, Brennan Center for Justice, NYU School of Law, viewed 11 March 2007, <www.fepproject.org/courtbriefs/stlouis.pdf>
- Anand, S. & Krosnick, J. 2005, 'Demographic predictors of media use among infants, toddlers, and preschoolers', *American Behavioral Scientist*, vol. 48, no. 5, pp. 539–61
- Andersen, R.E., Crespo, C.J., Bartlett, S.J., Cheskin, L.J. & Pratt, M. 1998, 'Relationship of physical activity and television watching with body weight and level of fatness among children: results from the Third National Health and Nutrition Examination Survey', *Journal of the American Medical Association*, vol. 279, no. 12, pp. 938–42
- Anderson, Chris. 2004, 'The long tail', *Wired*, vol. 12, no. 10
- 2006, *The long tail: why the future of business is selling less of more*, Hyperion, New York

- Anderson, C. 1997, 'Effects of violent movies and trait irritability on hostile feelings and aggressive thoughts', *Aggressive Behaviour*, vol. 23, pp. 161–78
- 2004, 'An update on the effects of playing violent video games', *Journal of Adolescence*, vol. 27, no. 1, pp. 113–22
- Anderson, C., Berkowitz, L., Donnerstein, E., Huesmann, L.R., Johnson, J., Linz, D., Malamuth, N. & Wartella, E. 2003, 'The influence on media violence on youth', *Psychological science in the public interest*, vol. 4, no. 3, pp. 81–110
- Anderson, C. & Bushman, B. 2001, 'Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: a meta-analytic review of the scientific literature', *Psychological Science*, vol. 12, no. 5, pp. 353–59
- 2002, 'The effects of media violence on society', *Science*, vol. 295, pp. 2,377–8.
- Anderson, C. & Dill, K. 2000, 'Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life', *Journal of Personality & Social Psychology*, vol. 78, no. 4, pp. 772–90
- Anderson, C., Gentile, D. & Buckley, K. 2007, *Violent video game effects on children and adolescents: theory, research, and public policy*, OUP, Oxford
- Anderson, C. & Morrow, M. 1995, 'Competitive aggression without interaction: effects of competitive versus cooperative instructions on aggressive behavior in video games', *Personality and Social Psychology Bulletin*, vol. 21, no. 10, pp. 1,020–30
- Ang, I. 1991, *Desperately seeking the audience*, Routledge, London
- Arnett, J. & Terharian, G. 1998, 'Adolescents' responses to cigarette advertisements: links between exposure, liking, and the appeal of smoking', *Tobacco Control*, vol. 7, pp. 129–33
- Arnseth, H. 2006, 'Learning to play or playing to learn: a critical account of the models of communication informing educational research on computer gameplay', *Game Studies: The International Journal of Computer Game Research*, vol. 6, no. 1, viewed 2 March 2007, <<http://gamestudies.org/0601/articles/arnseth>>
- Atkin, D., Hocking, J. & Block, M. 1984, 'Teenage drinking: does advertising make a difference?', *Journal of Communication*, vol. 34, no. 2, pp. 157–67
- Atkinson, J. 1990, 'Violence against aboriginal women: reconstitution of community law—the way forward', *Aboriginal Law Bulletin*, vol. 2, no. 46
- Attwood, F. 2004, 'Pornography and objectification', *Feminist Media Studies*, vol. 4, no. 1, pp. 7–19
- 2005, 'Fashion and passion: marketing sex to women', *Sexualities*, vol. 8, no. 4, pp. 392–406
- Austin, S. 2000, 'Prevention research in eating disorders: theory and new directions', *Psychological Medicine*, vol. 30, no. 6, pp. 1,249–62
- Australian Associated Press 2006, *Fed: address pornography role in indigenous violence: forum*, Australian Associated Press, viewed 12 February 2007 <<http://proquest.umi.com.ezproxy.une.edu.au/pqdweb?did=1062547561&sid=1&Fmt=3&clientId=20804&RQT=309&VName=PQD>>
- Australian Broadcasting Authority 2000, *Commercial radio inquiry: final report*, Australian Broadcasting Authority, Sydney

- 2001, *Background to the Children's Television Standards*, viewed 28 December 2003, <www.aba.gov.au/tv/content/childtv/background/index.htm>
- 2003, *Understanding community attitudes to radio content*, Australian Broadcasting Authority, Sydney
- 2005, *Children's Television Standards*, viewed 21 January 2003 <www.acma.gov.au/acmainterwr/aba/contentreg/codes/television/documents/childrens_tv_standards_2005.pdf>
- Australian Bureau of Statistics 2003, *Children's participation in cultural and leisure activities, Australia 4901.0*, Australian Bureau of Statistics, Canberra
- 2004, *Children's participation in cultural and leisure activities, Australia 4901.0*, Australian Bureau of Statistics, Canberra
- 2005 (reissue), *Personal safety survey Australia 4906.0*, Australian Bureau of Statistics, Canberra
- 2006, *Children's participation in cultural and leisure activities, Australia 4901.0*, Australian Bureau of Statistics, Canberra
- Australian Children's Television Foundation 2007, *What's fair teaching kit*, Australian Children's Television Foundation, 12 March 2007, Online component of a cross-curricula teaching resource, <www.actf.com.au/learning_centre/school_resources/teaching_kits/whf/units/whf_unit7.htm>
- Australian College of Paediatrics 1994, 'The Australian College of Paediatrics: policy statement', *Journal of Paediatric Child Health*, vol. 30, pp. 6–8
- Australian Institute of Health and Welfare 2003, *Australia's young people: their health and wellbeing 2003*, Australian Institute of Health and Welfare, Canberra
- 2007, *Child protection Australia 2005–2006*, 40, Australian Institute of Health and Welfare, Canberra
- Australian Mobile Telecommunications Association 2005, *Mobile phones and bullying: what you need to know to get the bullies off your back*, Australian Mobile Telecommunications Association
- Bachl, M. 2006, 'Computers breed a new addiction', *The Age*, 15 October 2006
- Baldaro, B., Tuozi, G., Codispoti, M. & Montebanocci, O. 2004, 'Aggressive and non-violent videogames: short-term psychological and cardiovascular effects on habitual players', *Stress and Health*, vol. 20, no. 4, pp. 203–8
- Ballard, M. & Lineberger, R. 1999, 'Video game violence and confederate gender: effects on reward and punishment given by college males', *Sex Roles*, vol. 41, no. 7–8, pp. 541–58
- Bandura, A. 1977a, 'Self-efficacy: toward a unifying theory of behavioral change', *Psychology Review*, vol. 84, pp. 191–215
- 1977b, *Social learning theory*, Prentice Hall, Englewood Cliffs, NJ
- 1986, *Social foundations of thought and action: a social cognitive theory*, Prentice Hall, Englewood Cliffs, NJ
- 1989, 'Human agency in social cognitive theory', *American Psychologist*, vol. 44, pp. 1,175–84

- Bandura, A., Ross, D. & Ross, S. 1963, 'Imitation of film-mediated aggressive models', *Journal of Abnormal & Social Psychology*, vol. 66, no. 1, pp. 3–11
- Banet-Weiser, S. 2004, 'Girls rule!: gender, feminism, and Nickelodeon', *Critical Studies in Media Communication*, vol. 21, no. 2, pp. 119–39
- Banks, J. 2002, 'Gamers as co-creators', in M. Balnaves, T. O'Regan & J. Sternberg (eds), *Mobilising the audience*, University of Queensland Press, Brisbane, vol. 188–212
- Barak, A. & Fisher, W. 2003, 'Experience with an internet-based, theoretically grounded educational resource for the promotion of sexual and reproductive health', *Sexual and Relationship Therapy*, vol. 18, no. 3, pp. 293–308
- Barak, A. & Miron, O. 2005, 'Writing characteristics of suicidal people on the internet: a psychological investigation of emerging social environments', *Suicide and Life-Threatening Behavior*, vol. 35, pp. 507–24.
- Barbatis, G. & Guy, Y. 1991, 'Analysing meaning in form: soap opera's compositional construction of "realness"', *Journal of Broadcasting and Electronic Media*, vol. 35, pp. 59–74.
- Barker, M. & Petley, J. (eds) 2001, *Ill effects: the media/violence debate*, 2nd edn, Routledge, London
- Barner, M.R. 1999, 'Sex-role stereotyping in FCC-mandated children's educational television', *Journal of Broadcasting & Electronic Media*, vol. 43, no. 4, pp. 551–65
- Bartholow, B. & Anderson, C. 2002, 'Effects of violent video games on aggressive behavior: potential sex differences', *Journal of Experimental Social Psychology*, vol. 38, no. 3, pp. 283–90
- Bartholow, B., Bushman, B. & Sestir, M. 2006, 'Chronic violent video game exposure and desensitization to violence: behavioral and event-related brain potential data', *Journal of Experimental Social Psychology*, vol. 42, no. 4, pp. 532–9
- Bartholow, B., Sestir, M. & Davis, E. 2005, 'Correlates and consequences of exposure to video game violence: hostile personality, empathy, and aggressive behavior', *Personality and Social Psychology Bulletin*, vol. 31, no. 11, pp. 1,573–86
- Bartle, R. 1996, *Hearts, clubs, diamonds, spades: players who suit MUDS*, viewed 6 March 2007 <www.mud.co.uk/richard/hcde.htm>
- Barwick, H. 2003, *A guide to the research into the effects of sexually explicit films and videos*, New Zealand Office of Film and Literature Classification
- Battles, K. & Hilton-Morrow, W. 2002, 'Gay characters in conventional spaces: Will and Grace and the situation comedy genre', *Critical Studies in Media Communication*, vol. 19, no. 1, pp. 87–105
- Beavis, C. 2005, 'Pretty good for a girl: gender, identity and computer games', paper presented to DiGRA (Digital and Games Research Association) Conference 2005, Changing Views: Worlds in Play, Vancouver, Canada, 16–20 June 2005
- Beavis, C. & Charles, C. 2005, 'Challenging notions of gendered game play: teenagers playing The Sims', *Discourse*, vol. 26, no. 3, pp. 355–67
- Beentjes, J., Koolstra, C. & Van Der Voort, T. 1996, 'Combining background media with doing homework: incidence of background media use and perceived effects', *Communication Education*, vol. 45, no. 1, pp. 59–72

- Beentjes, J. & Van Der Voort, T. 1988, 'Television's impact on children's reading skills: a review of research', *Reading Research Quarterly*, vol. 23, no. 4, pp. 389–413
- Bennett, T., Frith, S., Grossberg, L., Shepherd, J. & Turner, G. (eds) 1993, *Rock and popular music: politics, policies, institutions*, Routledge, London
- Bensley, L. & Van Eenwyk, J. 2001, 'Video games and real-life aggression: review of the literature', *Journal of Adolescent Health*, vol. 29, no. 4, pp. 244–57
- Berkowitz, L. 1990, 'On the formation and regulation of anger and aggression: a cognitive neoassociationistic analysis', *American Psychologist*, vol. 45, pp. 494–503
- Berkowitz, L. & Powers, P. 1979, 'Effects of timing and justification of witnessed aggression on the observers' punitiveness', *Journal of Research in Personality*, vol. 13, pp. 71–80
- Bessi re, K., Keisler, S., Kraut, R. & Boneva, B. 2004, 'Longitudinal effects of internet use on depressive affect: a social resources approach', paper presented to American Sociological Association, Philadelphia, PA, <www-2.cs.cmu.edu/~kraut/RKraut.site.files/articles/Bessiere04-InternetDepress12-04.pdf>
- Bickham, D., Wright, J. & Huston, A.C. 2001, 'Attention, comprehension, and the educational influences of television', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 101–19
- Biely, E., Cope, K.M. & Kunkel, D. 1999, 'Sexual messages on television: comparing findings from three studies', *The Journal of Sex Research*, vol. 36, no. 3, pp. 230–6
- Bittman, M. 1998, *The land of the lost weekend?: trends in free time among working age Australians*, 83, Social Policy Research Centre, University of New South Wales, Sydney
- Bittman, M. & Wajcman, J. 2000, 'The rush hour: the character of leisure time and gender equity', *Social Forces*, vol. 79, no. 1, pp. 165–89
- Blackmon, S. 2005, 'Racing towards representation: an understanding of racial representation in video games', paper presented to American Studies Lecture Series: Globalization, Transnationalism and the Future of American Studies, Purdue University, November 18, 2005
- Bloustien, G. 2003, *Girl making: a cross-cultural ethnography on the processes of growing up female*, Bergahn Books, New York
- Blumer, H. 1969, *Symbolic interactionism: perspective and method*, Prentice-Hall, Englewood Cliffs, NJ
- Bocij, P. 2003, 'Victims of cyberstalking: an exploratory study of harassment perpetrated via the internet', *First Monday: Peer Reviewed Journal on the Internet*, vol. 8, no. 10, viewed 12 February 2007, <www.firstmonday.org/issues/issue8_10/bocij/index.html>
- Bogaert, A. 2001, 'Personality, individual differences, and preferences for the sexual media', *Archives of Sexual Behavior*, vol. 30, no. 1, pp. 29–53
- Bond, J. 2004, 'Paying for the music', *p2pnet.net*, viewed 7 August 2005, <<http://p2pnet.net/story/2672>>
- Bonk, C. & Dennen, V. 2005, *Massive multiplayer online gaming: a research framework for military training and education*, 2005–1, Office of the Under Secretary of Defense for Personnel and Readiness, Department of Defense, United States of America

- Bonner, F. 2000, 'Lifestyle programs: "no choice but to choose"', in G. Turner & S. Cunningham (eds), *The Australian TV book*, Allen & Unwin, St Leonards, NSW, pp. 103–16
- Booth, E. & Hayes, D. 2005, 'Authoring the brand: literary licensing', *Young Consumers: Insight and Ideas for Responsible Marketers*, vol. 7, no. 1, pp. 43–53
- Bourdieu, P. 1986, *Distinction: a social critique of the judgement of taste*, Routledge, London
- Borzekowski, D., Fobil, J. & Asante, K. 2006, 'Online access by adolescents in Accra: Ghanaian teens' use of the internet for health information', *Developmental Psychology*, vol. 42, no. 3, pp. 450–8
- Borzekowski, D. & Rickert, V. 2001, 'Adolescent cybersurfing for health information: a new resource that crosses barriers', *Archives of Pediatric Adolescent Medicine*, vol. 155, no. 7, pp. 813–7
- Borzekowski, D. & Robinson, T. 2001, 'The 30-second effect: an experiment revealing the impact of television commercials on food preferences of preschoolers', *Journal of the American Dietetic Association*, vol. 101, no. 1, pp. 42–6
- Borzekowski, D., Robinson, T. & Killen, J. 2000, 'Does the camera add 10 pounds?: media use, perceived importance of appearance, and weight concerns among teenage girls', *Journal of Adolescent Health*, vol. 26, no. 1, pp. 36–41
- Boynton-Jarrett, R., Thomas, T., Peterson, K., Wiecha, J., Sobol, A. & Gortmaker, S. 2003, 'Impact of television viewing patterns on fruit and vegetable consumption among adolescents', *Pediatrics*, vol. 112, no. 6, pp. 1,321–25
- Bragg, S. & Buckingham, D. 2002, *Young people and sexual content on television*, Broadcasting Standards Commission, London
- Brough, R., & Sills, J. 2006, 'Multimedia bullying using a website', *Archives of Disease in Childhood*, vol. 91, No. 2, p. 202
- Broadcasting Standards Commission 2003, *Briefing update No. 12: ethnicity and disability on television 1997–2002*, Broadcasting Standards Commission, London
- Brown, B., Geelhoed, E. & Sellen, A. 2001, *The use of conventional and new music media: implications for future technologies*, HPL-201-102, Hewlett-Packard Laboratories, Bristol
- Brown, J.D. 2002, 'Mass media influences on sexuality', *The Journal of Sex Research*, vol. 39, no. 1, pp. 42–5
- Brown, J.D., L'Engle, K., Pardun, C.J. & Guo, G. 2006, 'Sexy media matter: exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior', *Pediatrics*, vol. 117, no. 4, pp. 1,018–27
- Brown, J.D., Steele, J. & Walsh-Childers, K. 2002, 'Introduction and overview', in J.D. Brown, J. Steele & K. Walsh-Childers (eds), *Sexual teens, sexual media: investigating media's influence on adolescent sexuality*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 1–24
- Browne, K. & Hamilton-Giachritsis, C. 2005, 'The influence of violent media on children and adolescents: a public-health approach', *The Lancet*, vol. 365, no. 9460, pp. 702–10
- Browne, K. & Pennell, A. 2000, 'The influence of film and video on young people and violence', in G. Bowell (ed.), *Violent children and adolescents: asking the question why?*, Whurr, London, pp. 151–68

- Bruno, A. 2006, 'Year of the avatar: the music biz banks on Second Life's virtual boom for 2007', *Billboard*, vol. 118, no. 49, p. 20(1)
- Bruns, A. 2003, 'Fight for survival', *M/C: A Journal of Media Culture*, vol. 6, no. 1, viewed 12 November 2006, <www.media-culture.org/0302/07-fightforsurvival.html>
- Bryant, A., Sanders-Jackson, A. & Smallwood, A. 2006, 'IMing, text messaging, and adolescent social networks', *Journal of Computer-Mediated Communication*, vol. 11, no. 2, pp. 577–92
- Bryant, J. & Zillmann, D. (eds) 2002, *Media effects: advances in theory and research*, Lawrence Erlbaum Associates, Mahwah, NJ
- (eds) 2002, *Media effects: advances in theory and research*, Lawrence Erlbaum Associates, Mahwah, NJ
- Bryce, J. 1987, 'Family time and television use', in T. Lindof (ed.), *Natural audiences: qualitative research on media uses and effects*, Ablex, Norwood, NJ, pp. 121–38
- Bryce, J. & Rutter, J. 2003, 'Gender dynamics and the social and spatial organization of computer gaming', *Leisure Studies*, vol. 22, no. 1, pp. 1–15
- Buckingham, D. 1993, *Children talking television: the making of television literacy*, Routledge, London
- 1996, *Moving images: understanding children's emotional responses to television*, Manchester University Press, Manchester
- 2000, *After the death of childhood: growing up in the age of electronic media*, Polity, Cambridge, UK
- 2003, 'Media education and the end of the critical consumer', *Harvard Educational Review*, vol. 73, no. 3, pp. 309–28
- 2006a, 'Children and new media', in L. Lieverow & S. Livingstone (eds), *The handbook of new media: social shaping and social consequences of ICTs*, 2nd edn, Sage, London, pp. 75–92
- 2006b, 'Studying computer games', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 1–13
- Buckingham, D., Banaji, S., Burn, A., Carr, D., Cranmer, S. & Willett, R. 2005, *The media literacy of children and young people: a review of the research literature on behalf of Ofcom*, Ofcom, London
- Buckingham, D. & Bragg, S. 2003, *Young people, media and personal relationships*, Advertising Standards Authority, British Board of Film Classification, British Broadcasting Corporation, Broadcasting Standards Commission, Independent Television Commission, London
- 2004, *Young people, media and personal relationships: the facts of life?*, Palgrave Macmillan, Basingstoke
- Buckingham, D., Davies, H., Jones, K. & Kelley, P. 1999, *Children's television in Britain: history, discourse and policy*, British Film Institute, London
- Buckingham, D. & Sefton-Green, J. 2004, 'Structure, agency, and pedagogy in children's media culture', in J. Tobin (ed.), *Pikachu's global adventure: The rise and fall of Pokémon*, Duke University Press, Durham, NC, pp. 12–33

- Burbules, N. 1998, 'Rhetorics of the web: hyperreading and critical literacy', in I. Snyder (ed.), *Page to screen: taking literacy into the electronic era*, Routledge, London, pp. 102–22
- Burn, A. 2006, 'Playing roles', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 72–87
- Burn, A. & Carr, D. 2006a, 'Defining game genres', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 14–29
- 2006b, 'Motivation and online gaming', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 103–18
- Bushman, B. 1995, 'Moderating role of trait aggressiveness in the effects of violent media on aggression', *Journal of Personality and Social Psychology*, vol. 69, pp. 950–60
- 1996, 'Individual differences in the extent and development of aggressive cognitive-associative networks', *Personality and Social Psychology Bulletin*, vol. 22, pp. 811–9
- 1998, 'Priming effects of violent media on the accessibility of aggressive constructs in memory', *Personality and Social Psychology Bulletin*, vol. 24, pp. 537–45
- Bushman, B. & Anderson, C. 2002, 'Violent video games and hostile expectations: a test of the general aggression model', *Personality and Social Psychology Bulletin*, vol. 28, no. 12, pp. 1,679–86
- Bushman, B. & Geen, R. 1990, 'The role of cognitive-emotional mediators and individual differences in the effects of media violence on aggression', *Journal of Personality and Social Psychology*, vol. 58, pp. 156–63
- Bushman, B. & Huesmann, L.R. 2001, 'Effects of televised violence on aggression', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 223–54
- Buzzell, T. 2005, 'The effects of sophistication, access and monitoring on use of pornography in three technological contexts', *Deviant Behavior*, vol. 26, no. 2, pp. 109–32
- Callow, J. & Zammit, K. 2002, 'Visual literacy: from picture books to electronic texts', in M. Monteith (ed.), *Teaching primary literacy with ICT*, Open University Press, Buckingham, pp. 188–201
- Calvert, S. 1999, *Children's journeys through the information age*, McGraw-Hill College, Boston
- Campbell, M. 2005, 'Cyber bullying: an old problem in a new guise?' *Australian Journal of Guidance and Counselling*, vol. 15, no. 1, pp. 68–76
- Cantor, J. 2001, 'The media and children's fears, anxieties and perceptions of danger', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 207–21
- 2002, 'Fright reactions to mass media', in J. Bryant & D. Zillmann (eds), *Media effects: advances in theory and research*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 287–306
- Cantor, J., Wilson, B. & Hoffner, C. 1986, 'Emotional responses to a televised nuclear holocaust film', *Communications Research*, vol. 7, no. 1, pp. 58–75

- Carlson, M., Marcus-Newhall, A. & Miller, N. 1990, 'Effects of situational aggression cues: a quantitative review', *Journal of Personality and Social Psychology*, vol. 58, pp. 622–33
- Carlsson, U. & von Feilitzen, C. (eds) 2006, *In the service of young people: studies and reflections on media in the digital age*, Nordicom, Göteborg, SW
- Carnagey, N. & Anderson, C. 2005, 'The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior', *Psychological Science*, vol. 16, no. 11, pp. 882–9
- Carroll, T. & Donovan, R. 2002, 'Alcohol marketing on the internet: new challenges for harm reduction', *Drug & Alcohol Review*, vol. 21, no. 1, pp. 83–91
- Carpini, M. 2000, 'Gen.com: youth, civic engagement, and the new information environment', *Political Communication*, vol. 17, no. 4, pp. 341–9
- Carr, D. 2006, 'Games and gender', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 162–78
- Carr, D., Buckingham, D., Burn, A. & Schott, G. (eds) 2006, *Computer games: text, narrative and play*, Polity Press, Cambridge, UK
- Carr, J. 2004, *Children's safety online: a digital manifesto*, Children's Charities Coalition for Internet Safety, London
- Carter, O. 2006, 'The weighty issue of Australian television food advertising and childhood obesity', *Health Promotion Journal of Australia*, vol. 17, no. 1, pp. 5–11
- Cashmore, J. & Trimboli, L. 2005, *An evaluation of the NSW Child Sexual Assault Specialist Jurisdiction Pilot*, NSW Bureau of Crime Statistics and Research, Sydney
- Cassell, J. & Jenkins, H. (eds) 1998, *From Barbie to Mortal Kombat: gender and computer games*, MIT Press, Cambridge, MA
- Castells, M. 2002, *The internet galaxy: reflections on the internet, business and society*, Open University Press, Oxford
- Castranova, E. 2005, *Synthetic worlds: the business and culture of online games*, University Of Chicago Press, Chicago
- Center for Science in the Public Interest 2003, *Pestering parents: how food companies market obesity to children* viewed 2 April 2007
<www.cspinet.org/new/pdf/pages_from_pestering_parents_final_pt_3.pdf>
- Centre for Media Education 1998, *Alcohol advertising targeted at youth on the internet: an update*, Centre for Media Education, Washington
- Centres for Disease Control and Prevention 1994, *Changes in brand preference of adolescent smokers – United States, 1989–1993*, MMWR
- 2004, *Effect of ending an antitobacco youth campaign on adolescent susceptibility to cigarette smoking – Minnesota, 2002–2003*, MMWR
- Chandler-Olcott, K. & Mahar, D. 2003, 'Tech-savviness meets multiliteracies: exploring adolescent girls' technology-mediated literacy practices', *Reading Research Quarterly*, vol. 38, no. 3, pp. 356–86
- Charlton, J. 2002, 'A factor analysis investigation of computer "addiction" and engagement', *British Journal of Psychology*, vol. 93, no. 3, pp. 329–44

- Charman, S. & Holloway, M. 2006, 'Copyright in a collaborative age', *M/C Journal*, vol. 9, no. 2, viewed 30 January 2007, <<http://journal.media-culture.org.au/0605/02-charmanholloway.php>>
- Chesley, E., Alberts, J., Klein, J. & Kreipe, R. 2003, 'Pro or con?: Anorexia nervosa and the internet', *Journal of Adolescent Health*, vol. 32, no. 2, pp. 123–4
- Children Now 2005, *Interactive advertising and children: issues and implications*, viewed 2 April 2007 <www.childrennow.org/assets/pdf/issues_media_iadbrief_2005.pdf>
- Chiricos, T. & Eschholz, S. 2002, 'The racial and ethnic typification of crime and the criminal typification of race and ethnicity in local television news', *The Journal of Research in Crime and Delinquency*, vol. 39, no. 4, pp. 400–20
- Chiricos, T., Eschholz, S. & Gertz, M. 1997, 'Crime, news and fear of crime: toward an identification of audience effects', *Social Problems*, vol. 44, no. 3, pp. 342–57
- Christenson, P. & Roberts, D. 1998, *It's not only rock & roll: popular music in the lives of adolescents*, Blackwell Synergy, London
- Chung, G. & Grimes, S. 2005, *Cool hunting the kids' digital playground: datamining and the privacy debates in children's online entertainment sites*, paper presented to 38th Hawaii International Conference on System Sciences, Waikoloa, Hawaii
- Clarkson, J. 2005, 'Contesting masculinity's makeover: Queer Eye, consumer masculinity, and "Straight-Acting" gays', *The Journal of Communication Inquiry*, vol. 29, no. 3, pp. 235–55
- Clarsen, G. 2002, 'Still moving: bush mechanics in the Central Desert', *Australian Humanities Review*, vol. 25, no. March–May 2002, viewed 12 March 2007, <www.lib.latrobe.edu.au/AHR/archive/Issue-March-2002/clarsen.html>
- Cline, V., Croft, R. & Courier, S. 1973, 'Desensitisation of children to television violence', *Journal of Personality and Social Psychology*, vol. 27, pp. 360–5
- CNET Networks Entertainment 2007, *Gamespot*, CNET Networks Entertainment, 3 March 2007, website, <<http://au.gamespot.com/reviews.html>>
- Cohen, J. 1988, *Statistical power analysis for the behavioral sciences*, 2nd edn, Lawrence Erlbaum Associates, Hillsdale, NJ
- Collins, R., Elliott, M., Berry, S., Kanouse, D., Kunkel, D., Hunter, S. & Miu, A. 2004, 'Watching sex on television predicts adolescent initiation of sexual behavior', *Pediatrics*, vol. 114, no. 3, pp. e280–9
- Commercial Radio Australia 2006, *Radio in a multimedia environment*, viewed 20 February 2007 <www.commercialradio.com.au/ssl/documents/Mobile%20technology.pdf>
- Comstock, G. 1980, 'New emphases in research on the effects of television and film violence', in E.L. Palmer & A. Dorr (eds), *Children and the faces of television: teaching, violence, selling*, Academic Press, New York, pp. 129–48
- Connolly, G., Casswell, S., Zhang, J. & Silva, P. 1994, 'Alcohol in the mass media and drinking by adolescents: a longitudinal study', *Addiction*, vol. 89, no. 10, pp. 1,255–63
- Consalvo, M. 2003, 'Hot dates and fairy-tale romances: studying sexuality in video games', in M. Wolf & B. Perron (eds), *The video game theory reader*, Routledge, New York, pp. 171–94
- Consumer Review.com 1996-2007, *VideoGameReview*, Consumer Review.com: a division of E-centives Inc., 3 March 2007, website, <www.videogamereview.com/>

- Coon, K., Goldberg, J., Rogers, B. & Tucker, K. 2001, 'Relationships between use of television during meals and children's food consumption patterns', *Pediatrics*, vol. 107, no. 1, p. E7
- Coon, K. & Tucker, K. 2002, 'Television and children's consumption patterns: a review of the literature', *Minerva Pediatrics*, vol. 54, no. 4, pp. 423–36
- Cope, B. & Kalantzis, M. (eds) 2000, *Multiliteracies: literacy learning and the design of social futures*, Macmillan, Melbourne
- Cope-Farrer, K. & Kunkel, D. 2002, 'Sexual messages in teen's favorite prime-time television programs', in J.D. Brown, J. Steele & K. Walsh-Childers (eds), *Sexual teens, sexual media: investigating media's influence on adolescent sexuality*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 59–78
- Coroneos, P. 2001, 'The operation of Australia's internet content legislation', *Media International Australia incorporating Culture and Policy*, vol. 101, pp. 73–80
- Corrigan, P. 1997, *The sociology of consumption*, Sage, London
- Corsaro, W. 2004, *The sociology of childhood*, 2nd edn, Pine Forge Press, Thousand Oaks, CA
- Cover, R. 2006, 'Gaming (ad)diction: discourse, identity, time and play in the production of the gamer addiction myth', *Game Studies: The International Journal of Computer Game Research*, vol. 6, no. 1, viewed 2 March 2007, <<http://gamestudies.org/0601/articles/cover>>
- Cragg, A. 2000, *R18 pornography: are 'experts' in a position to say that children are harmed if they view R18 videos?*, British Board of Film Classification (BBFC) /Cragg Ross Dawson Ltd, London
- Crawley, A., Anderson, D., Santomero, A., Wilder, A., Williams, M., Evans, M. & Bryant, J. 2002, 'Do children learn how to watch television?: the impact of extensive experience with Blue's Clues on preschool children's television viewing behavior', *Journal of Communication*, vol. 52, no. 2, pp. 264–80
- Cumberbatch, G. 2000, 'Only a game?', *New Scientist*, vol. 166, pp. 44–5
- 2004, *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*, Video Standards Council
- Cumberbatch, G., Gauntlett, S. & Littlejohns, V. 2003, *A content analysis of sexual activity and nudity on British terrestrial television*, BBC, BSC, ITC
- Cummings, J., Lee, J. & Kraut, R. 2006, 'Communication technology and friendship during the transition from high school to college', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology* Oxford University Press, Oxford, pp. 265–78
- Cupitt, M. & Stockbridge, S. 1996, *Families and electronic entertainment*, Australian Broadcasting Authority & Office of Film and Literature Classification, Sydney
- Davie, R., Panting, C. & Charlton, T. 2004, 'Mobile phone ownership and usage among pre-adolescents', *Telematics and Informatics*, vol. 21, no. 4, pp. 359–73
- Davies, H., Buckingham, D. & Kelley, P. 2000, 'In the worst possible taste: children, television and cultural value', *European Journal of Cultural Studies*, vol. 3, no. 1, pp. 5–25

- Davies, J. 2006, “‘Hello newbie! [smile]**big welcome hugs** hope u like it here as much as i do! [grin]’”: an exploration of teenagers informal online learning’, in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 211–28
- Davies, M. 1997, *Fake, fact and fantasy: children’s interpretation of television reality*, Lawrence Erlbaum Associates, Mahwah, NJ
- Davison, W. 1983, ‘The third-person effect in communication’, *Public Opinion Quarterly*, vol. 47, no. 1, pp. 1–15
- Dietz, W. & Strasberger, V. 1991, ‘Children, adolescents, and television’, *Current Problems in Pediatric and Adolescent Health Care*, vol. 21, pp. 8–32
- Dill, K. & Dill, J. 1998, ‘Video game violence: a review of the empirical literature’, *Aggression & Violent Behavior*, vol. 3, no. 3, pp. 407–28
- Distefan, J., Gilpin, E., Sargent, J. & Pierce, J. 1999, ‘Do movie stars encourage adolescents to start smoking?: evidence from California’, *Preventive Medicine*, vol. 28, no. 1, pp. 1–11
- Dixon, T., Azocar, C. & Casas, M. 2003, ‘The portrayal of race and crime on television network news’, *Journal of Broadcasting & Electronic Media*, vol. 47, no. 4, pp. 498–523
- Dixon, T. & Linz, D. 2002, ‘Television news, prejudicial pretrial publicity, and the depiction of race’, *Journal of Broadcasting & Electronic Media*, vol. 46, no. 1, pp. 112–36
- Dobson, R. 1999, ‘Internet sites may encourage suicide’, *British Medical Journal*, vol. 319, no. 7206, p. 337
- Donnerstein, E., Slaby, R. & Eron, L. 1994, ‘The mass media and youth aggression’, in L. Eron, J. Gentry & P. Schlegel (eds), *Reason to hope: a psychosocial perspective on violence and youth*, American Psychological Association, Washington D.C., pp. 219–50
- Dorr, A., Kovaric, P. & Doubleday, C. 1989, ‘Parent child co-viewing of television’, *Journal of Broadcasting & Electronic Media*, vol. 33, no. 1, pp. 35–51
- Dotson, M. & Hyatt, E. 2005, ‘Major influence factors in children’s consumer socialization’, *Journal of Consumer Marketing*, vol. 22, no. 1, pp. 35–42
- Downes, T. 2002, ‘Blending play, practice and performance: children’s use of the computer at home’, *Journal of Educational Enquiry*, vol. 3, no. 2, pp. 21–34
- Downie, C. and Glazebrook, K. 2007, *Mobile phones and the consumer kids*, Research Paper No. 41, The Australia Institute
- Drabman, R. & Thomas, M. 1974, ‘Does media violence increase children's toleration of real-life aggression?’ *Developmental Psychology*, vol. 10, no. 3, pp. 418–21
- Driver, S. 2006, ‘Virtually queer youth communities of girls and birls: dialogical spaces of identity work and desiring exchanges’, in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 229–50
- Du Gay, P., Hall, S., Janes, L., Mackay, H. & Negus, K. 1997, *Doing cultural studies: the story of the Sony Walkman*, Sage, London

- Ducheneaut, N. & Moore, R. 2005, 'More than just "XP": learning social skills in massively multiplayer online games', *Interactive Technology and Smart Education*, vol. 2, no. 2, pp. 89–100
- Duck, J. & Noble, G. 1979, "'Sesame Street" and "Play School": a comparison and contrast of the two programs as suitable for a four year old target audience', *Media Information Australia*, vol. 13, pp. 15–23
- Duncan, M. 2006, *Aboriginal child sexual abuse taskforce*, paper presented to Forum on Child Sexual Assault in Aboriginal Communities, NSW Parliament House, 5 December 2006,
<www.cjrn.unsw.edu.au/news_&_events/documents/Speech_MarciaEllaDuncan_5Dec06.doc>
- DuRant, R., Rome, E., Rich, M., Allred, E., Emans, S. & Woods, E. 1997, 'Tobacco and alcohol use behaviors portrayed in music videos: a content analysis', *American Journal of Public Health*, vol. 87, no. 7, pp. 1,131–5
- Durkin, K. & Aisbett, K. 1999, *Computer games and Australians today*, Office of Film and Literature Classification, Sydney
- Durkin, K. & Barber, B. 2002, 'Not so doomed: computer game play and positive adolescent development', *Journal of Applied Developmental Psychology*, vol. 23, no. 4, pp. 373–92
- Durkin, K. & Nugent, B. 1998, 'Kindergarten children's gender-role expectations for television actors', *Sex Roles*, vol. 38, no. 5/6, pp. 387–402
- Edgar, P. 2006, *Bloodbath : a memoir of Australian television*, Melbourne University Publishing, Carlton, Vic
- Edwards, M. 2004, 'The blonde with the guns: Barb Wire and the "implausible" female action hero', *Journal of Popular Film & Television*, vol. 32, no. 1, pp. 3947
- Eliezer, C. 2001, 'Music pirates mutate and grow', *Business Review Weekly*, 14 November 2001, p. 78
- Engeström, Y., Miettinen, R. & Punamäki, R.-L. (eds) 1999, *Perspectives in activity theory*, Cambridge University Press, Cambridge
- Entertainment Software Association 2006, *Essential facts about the computer and video game industry: 2006 sales, demographic and usage data*, The Entertainment Software Association
- Epstein, L., Roemmich, J., Paluch, R. & Raynor, H. 2005, 'Influence of changes in sedentary behaviour on energy and macronutrient intake in youth', *American Journal of Clinical Nutrition*, vol. 81, pp. 361–66
- Erikson, E. 1968, *Identity, youth and crisis*, Norton, New York
- Eron, L., Huesmann, L.R., Lefkowitz, M. & Walder, L. 1972, 'Does television violence cause aggression?' *American Psychologist*, vol. 27, pp. 253–63
- Eschholz, S., Blackwell, B., Gertz, M. & Chiricos, T. 2002, 'Race and attitudes towards the police: assessing the effects of watching "reality" police programs', *Journal of Criminal Justice*, vol. 30, no. 4, pp. 327–41
- Eschholz, S., Chiricos, T. & Gertz, M. 2003, 'Television and fear of crime: program types, audience traits, and the mediating effect of perceived neighborhood racial composition', *Social Problems*, vol. 50, no. 3, pp. 395–415

- Escobar-Chaves, S., Tortolero, S., Markham, C., Low, B., Eitel, P. & Thickstun, P. 2005, 'Impact of the media on adolescent sexual attitudes and behaviors', *Pediatrics*, vol. 116, no. 1 Part 2, pp. Supplement: 303–26
- Eyal, K. & Kunkel, D. 2005, *The effects of sex on television drama shows on emerging adults' sexual attitudes and moral judgments*, paper presented to International Communication Association Conference New York City, New York, 30 May 2005
- Eyal, K. & Rubin, A. 2003, 'Viewer aggression and homophily, identification and parasocial relationships with television characters', *Journal of Broadcasting & Electronic Media*, vol. 47, no. 1, pp. 77–98
- Facer, K., Furlong, J., Furlong, R. & Sutherland, R. 2003, *Screenplay: children and computing in the home*, Routledge Falmer, London
- Farrelly, M., Niederdeppe, J. & Yarsevich, J. 2003, 'Youth tobacco prevention mass media campaigns: past, present, and future directions', *Tobacco Control*, vol. 12, pp. i35–47
- Felton, G. & Bartoces, M. 2002, 'Predictors of initiation of early sex in black and white adolescent females', *Public Health Nursing*, vol. 19, no. 1, pp. 59–67
- Finkelhor, D., Mitchell, K. & Wolak, J. 2000, *Online victimization: a report on the nation's youth report: prepared for the National Center for Missing & Exploited Children*, National Center for Missing & Exploited Children
- Fiske, J. 1987, *Television culture*, Methuen, London
- 1989, *Reading the popular*, Unwin & Hyman, Boston
- Fitzgerald, B. & O'Brien, D. 2005, 'Digital sampling and culture jamming in a remix world: what does the law allow?' *Media and Arts Law Review*, vol. 10, no. 4, pp. 279–98
- Fitzgerald, B. & Oi, I. 2004, 'Free cultures: cultivating the Creative Commons', *Media and Arts Law Review*, vol. 9, no. 2, viewed 21 November 2002, <<http://eprints.qut.edu.au/archive/00000122/01/fitzgerald.pdf>>
- Fleming, D. 1996, *Powerplay: toys as popular culture*, Manchester University Press, Manchester
- Flood, M. 2007, 'Exposure to pornography among youth in Australia', *Journal of Sociology*, vol. 43, no. 1, pp. 45–60
- Flood, M. & Hamilton, C. 2003a, *Regulating youth access to pornography*, Discussion Paper No. 53, The Australia Institute
- 2003b, *Youth and pornography in Australia: evidence on the extent of exposure and likely effects*, Discussion Paper No. 52, The Australia Institute
- Flynn, B., Worden, J., Secker-Walker, R., Pirie, P., Badger, G., Carpenter, J. & Geller, B. 1994, 'Mass media and school interventions for cigarette smoking prevention: effects 2 years after completion', *American Journal of Public Health*, vol. 84, no. 7, pp. 1,148–50
- Foehr, U. 2006, *Media multitasking among American youth: prevalence, predictors and pairings*, Kaiser Family Foundation, Menlo Park, CA
- Fortunati, L. 2002, 'Italy: stereotypes, true and false', in J. Katz & M. Aakhus (eds), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, UK, pp. 42–62

- Foxwell, K. 2001, *Quantifying community radio: some qualifications*, paper presented to Communications Research Forum, Canberra, September 2001
- Francis, L., Lee, Y. & Birch, L. 2003, 'Parental weight status and girls' television viewing, snacking, and body mass indexes', *Obesity Research*, vol. 11, no. 1, pp. 143–51
- Frau-Meigs, D. 2006, 'Public service on digital media: letting young people's situation determine the timing and format?' in U. Carlsson & C. von Feilitzen (eds), *In the service of young people: studies and reflections on media in the digital age*, The International Clearinghouse on Children, Youth and Media, Nordicom, Göteborg, SW, pp. 13–26
- Fried, C. 1999, 'Who's afraid of rap: differential reactions to music lyrics', *Journal of Applied Social Psychology*, vol. 29, no. 4, pp. 705–21
- Friedrich-Cofer, L. & Huston, A.C. 1986, 'Television violence and aggression: the debate continues', *Psychological Bulletin*, vol. 100, pp. 364–71
- Frith, S. (ed.) 1990, *Facing the music: essays on pop, rock and culture*, Mandarin, London
- Fromme, J. 2003, 'Computer games as part of children's culture', *Game Studies: The International Journal of Computer Game Research*, vol. 3, no. 1, viewed 20 November 2006
- Funk, J. 2001, *Children and violent video games: are there high risk players?* paper presented to Playing the Rules, University of Chicago, 26–27 October 2001
- Funk, J., Baldacci, H., Pasold, T. & Baumgardner, J. 2004, 'Violence exposure in real-life, video games, television, movies, and the internet: is there desensitization?' *Journal of Adolescence*, vol. 27, no. 1, pp. 23–39
- Funk, J., Chan, M., Brouwer, J. & Curtiss, K. 2006, 'A biopsychosocial analysis of the video game-playing experience of children and adults in the United States', *Studies in Media & Information Literacy Education*, vol. 6, no. 3, p. no. 79, viewed 3 March 2007, <www.utpjournals.com/simile/issue23/Funk_fullarticle.html>
- Gabarino, J. 2001, 'Violent children: where do we point the finger of blame?' *Archives of Pediatric & Adolescent Medicine*, vol. 155, no. 1, pp. 13–4
- Ganahl, D., Prinsen, T. & Netzley, S. 2003, 'A content analysis of prime time commercials: a contextual framework of gender representation 1', *Sex Roles*, vol. 49, no. 9/10, pp. 545–51
- Gee, J. 2003, *What video games have to teach us about learning and literacy*, Palgrave Macmillan, New York
- Geen, R. 1981, 'Behavioral and physiological reactions to observed violence: effects of prior exposure to aggressive stimuli', *Journal of Personality and Social Psychology*, vol. 40, pp. 868–75
- 1990, *Human aggression*, Brooks/Cole, Pacific Grove, CA
- Gelfond, H. & Saloni-Pasternak, D. 2005, 'The play's the thing: a clinical-developmental perspective on video games', *Child and Adolescent Psychiatric Clinics of North America*, vol. 14, no. 3, pp. 491–508
- Gentile, D., Lynch, P., Linder, J. & Walsh, D. 2004, 'The effects of violent video game habits on adolescent hostility, aggressive behaviors, and school performance', *Journal of Adolescence*, vol. 27, no. 1, pp. 5–22

- Gentile, D. & Walsh, D. 2002, 'A normative study of family media habits', *Applied Developmental Psychology*, vol. 23, pp. 157–78
- Gerbner, G. 1990, 'Epilogue: advancing in the path of righteousness (maybe)', in N. Signorielli & M. Morgan (eds), *Cultivation analysis: new directions in media effects research*, Sage, Newberry Park, CA, pp. 249–62
- Gerbner, G., Gross, L., Morgan, M. & Signorielli, N. 1994, 'Growing up with television: the cultivation perspective', in J. Bryant & D. Zillmann (eds), *Media effects: advances in theory and research*, Lawrence Erlbaum, Hillsdale, NJ, pp. 17–41
- Gidwani, P., Sobol, A., DeJong, W., Perrin, J. & Gortmaker, S. 2002, 'Television viewing and initiation of smoking among youth', *Pediatrics*, vol. 110, no. 3, pp. 505–8
- Gillespie, M. 2002, *After September 11: TV news and transnational audiences*, Broadcasting Standards Commission, London
- Gilliam, F., Valentino, N. & Beckmann, M. 2002, 'Where you live and what you watch: the impact of racial proximity and local television news on attitudes about race and crime', *Political Research Quarterly*, vol. 55, no. 4, pp. 755–80
- Glascok, J. & Ruggiero, T. 2004, 'Representations of class and gender on primetime Spanish-language television in the United States', *Communication Quarterly*, vol. 52, no. 4, pp. 390–402
- Goffman, E. 1959, *The presentation of the self in everyday life*, University of Edinburgh, Edinburgh
- 1974, *Frame analysis*, Harper and Row, New York
- Goggin, G. 2006, *Cell phone culture: mobile technology in everyday life*, Routledge, Abingdon
- Goggin, G. & Griff, C. 2001, 'Regulating for content on the internet: meeting cultural and social objectives for broadband', *Media International Australia incorporating Culture and Policy*, vol. 101, pp. 19–32
- Goggin, G. & Newell, C. 2005, *Disability in Australia: exposing a social apartheid*, UNSW Press, Sydney
- Goldfield, G., Mallory, R., Parker, T., Cunningham, T., Legg, C., Lumb, A., Parker, K., Prud'homme, D., Gaboury, I. & Adamo, K. 2006, 'Effects of open-loop feedback on physical activity and television viewing in overweight and obese children: a randomised, controlled trial', *Pediatrics*, vol. 118, no. 1, pp. e157–66
- Goldstein, J. 1998, *Why we watch: the attractions of violent entertainment*, Oxford University Press, Oxford
- Goodman, I. 1983, 'Television's role in family interactions: a family systems perspective', *Journal of Family Issues*, vol. 4, no. 2, pp. 405–24
- Gortmaker, S., Must, A., Sobol, A., Peterson, K., Cheskin, L. & Pratt, M. 1996, 'Television watching as a cause of increasing obesity among children in the United States, 1986–1990', *Archives of Pediatric & Adolescent Medicine*, vol. 150, pp. 356–62
- Greenfield, P. 2004a, 'Developmental considerations for determining appropriate internet use guidelines for children and adolescents', *Journal of Applied Developmental Psychology*, vol. 25, pp. 751–62

- 2004b, 'Inadvertent exposure to pornography on the internet: implications for peer to peer file sharing networks for child development and families', *Applied Developmental Psychology*, vol. 25, pp. 741–50
- Greenfield, P., Gross, E., Subrahmanyam, K., Suzuki, L. & Tynes, B. 2006, 'Teens on the internet: interpersonal connection, identity and information', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford
- Greenfield, P. & Yan, Z. 2006, 'Children, adolescents, and the internet: a new field of inquiry in developmental psychology', *Developmental Psychology*, vol. 42, no. 3, pp. 391–4
- Gregg, M. 2006, 'Posting with passion: blogs and the politics of gender', in A. Bruns & J. Jacobs (eds), *Uses of blogs*, Peter Lang, New York, pp. 151–60
- Griebel, T. 2006, 'Self-portrayal in a simulated life: projecting personality and values in The Sims 2', *Game Studies: The International Journal of Computer Game Research*, vol. 6, no. 1, viewed 2 March 2007, <<http://gamestudies.org/0601/articles/griebel>>
- Griffiths, M. 1997, 'Video games and aggression', *Psychologist*, vol. 10, no. 9, pp. 397–401
- 1998, 'Internet addiction: does it really exist?' in J. Gackenback (ed.), *Psychology and the internet*, Academic Press, San Diego, pp. 61–75
- 2000a, 'Does internet and computer "addiction" exist?: some case study evidence', *CyberPsychology & Behavior*, vol. 3, no. 2, pp. 211–8
- 2000b, 'Videogame violence and aggression: a review of research', in C. von Feilitzen & U. Carlsson (eds), *Children in the new media landscape : games, pornography, perceptions*, Nordicom, Göteborg, SW, vol. Yearbook 2000, pp. 31–3
- 2003a, 'Internet gambling: issues, concerns and recommendations', *CyberPsychology & Behavior*, vol. 6, no. 6, pp. 557–68
- 2003b, 'The therapeutic use of videogames in childhood and adolescence', *Clinical Child Psychology and Psychiatry*, vol. 8, no. 4, pp. 547–54
- Griffiths, M. & Davies, M. 2002, 'Excessive online computer gaming: implications for education', *Journal of Computer Assisted Learning*, vol. 18, no. 3, pp. 379–80
- Griffiths, M., Davies, M. & Chappell, D. 2004, 'Online computer gaming: a comparison of adolescent and adult gamers', *Journal of Adolescence*, vol. 27, no. 1
- Grimes, T. & Bergen, L. 2001, 'The notion of convergence as an epistemological base for evaluating the effect of violent TV programming on psychologically normal children', *Mass Communication & Society*, vol. 4, no. 2, pp. 183–98
- 2004, 'Is psychopathology the key to understanding why some children become aggressive when they are exposed to violent television programming?' *Human Communication Research*, vol. 30, no. 2, pp. 153–81
- Grimes, T., Vernberg, E. & Cathers, T. 1997, 'Emotionally disturbed children's reactions to violent media segments', *Journal of Health Communication*, vol. 2, no. 3, pp. 157–68
- Grinter, R. & Eldridge, M. 2003, *Wan2talk?: everyday text messaging*, paper presented to SIGCHI Conference on Human factors in Computing Systems Ft. Lauderdale, Florida
- Grodal, T. 2003, 'Stories for eye, ear, and muscles: video games, media and embodied experiences', in M. Wolf & B. Perron (eds), *The video game theory reader*, Routledge, New York, pp. 129–55

- Groesz, L., Levine, M. & Murnen, S. 2002, 'The effect of experimental presentation of thin media images on body satisfaction: a meta-analytic review', *International Journal of Eating Disorders*, vol. 31, no. 1, pp. 1–16
- Gross, E. 2004, 'Adolescent internet use: what we expect, what teens report', *Journal of Applied Developmental Psychology*, vol. 25, no. 6, pp. 633–49
- Grossman, D. & DeGaetano, G. 1999, *Stop teaching our kids to kill: a call to action against TV, movie and video game violence*, New York, Crown Publishers
- Grube, J. & Wallack, L. 1994, 'Television beer advertising and drinking knowledge, beliefs, and intentions among schoolchildren', *American Journal of Public Health*, vol. 84, no. 2, pp. 254–9
- Gruber, E. & Thau, H. 2003, 'Sexually related content on television and adolescents of color: media theory, physiological development, and psychological impact', *The Journal of Negro Education*, vol. 72, no. 4, pp. 438–56
- Haby, M., Vos, T., Carter, R., Moodie, M., Markwick, A., Magnus, A., Tay-Teo, K. & Swinburn, B. 2006, 'A new approach to assessing the health benefit from obesity interventions in children and adolescents: the assessing cost-effectiveness in obesity project', *International Journal of Obesity*, vol. 30, no. 10, pp. 1,463–75
- Haddon, L. 1999, 'European perceptions and use of the internet', paper presented to Usages and Services in Telecommunications, Archachon, France, 7–9 June 1999
- 2004, *Information and communication technologies in everyday life*, New Technologies/New Cultures, Berg, Oxford
- Hall, S. 1993 [1974], 'The television discourse—encoding and decoding', in A. Gray & J. McGuigan (eds), *Studying culture: an introductory reader* Edward Arnold, London, pp. 28–34
- Halliday, M. 1978, *Language as social semiotic: the social interpretation of language and meaning*, Edward Arnold, London
- Halliday, M. & Hasan, R. 1985, *Language, context, and text: aspects of language in a social-semiotic perspective*, Oxford University Press, Oxford
- Hancox, R., Milne, B. & Poulton, R. 2004, 'Association between child and adolescent television viewing and adult health: a longitudinal birth cohort study', *Lancet*, vol. 364, pp. 257–62
- 2005, 'Association of television viewing during childhood with poor educational achievement', *Archives of Pediatrics and Adolescent Medicine*, vol. 159, no. 7, pp. 614–8
- Hancox, R. & Poulton, R. 2006, 'Watching television is associated with childhood obesity: but is it clinically important?' *International Journal of Obesity*, vol. 30, pp. 171–75
- Hands, B., Parker, H., Glasson, G., Brinkman, S. & Read, H. 2004, *Physical activity and nutrition levels in Western Australian children and adolescents: report*, Western Australian Government, Perth
- Hargreaves, D. & North, A. 1999, 'The functions of music in everyday life: redefining the social in music psychology', *Psychology of Music*, vol. 27, no. 1, pp. 84–95
- Harrison, K. & Cantor, J. 1999, 'Tales from the screen: enduring fright reactions to scary media', *Media Psychology*, vol. 1, no. 2, pp. 97–116

- Hartmann, T. & Klimmt, C. 2006, 'Gender and computer games: exploring females' dislikes', *Journal of Computer-Mediated Communication*, vol. 11, no. 4, pp. 910–31
- Hattie, J. 2007, *What works best and what evidence exists for narrowing the gap and addressing educational disadvantage*, paper presented to Narrowing the gap: assessing educational disadvantage, National Centre of Science, Information and Communication Technology, and Mathematic Education for Rural and Regional Australia, University of New England, 26–28 April 2007
- Hayward, P. (ed.) 1993, *From pop to punk to postmodernism: popular music and Australian culture from the 1960s to the 1990s*, Allen & Unwin, Sydney
- Helsper, E. 2005, *R18 material: its potential impact on people under 18*, Ofcom: Office of Communication
- Hendy, D. 2000, *Radio in the global age*, Polity, Cambridge
- Herman, D. 2003, "'Bad Girls changed my life": homonormativity in a women's prison drama', *Critical Studies in Media Communication*, vol. 20, no. 2, pp. 141–59
- Hill, A. 1997, *Shocking entertainment: viewer response to violent movies*, University of Luton Press, Luton
- Himmelweit, H., Oppenheim, A. & Vince, P. 1958, *Television and the child: an empirical study of television viewing on the young*, Oxford University Press, New York
- Hine, C. 2000, *Virtual ethnography*, Sage, London
- Hodge, B. & Kress, G. 1993, *Social semiotics*, Polity Press, Cambridge
- Hodge, B. & Tripp, D. 1986, *Children and television: a semiotic approach*, Polity Press, Cambridge
- Holderness, B. 2006, 'Towards bridging digital divides in rural South Africa', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 251–72
- Holloway, D. 2003, 'Sharing Foxtel: the kids are back around the hearth again', *M/C: A Journal of Media and Culture*, vol. 6, no. 2, viewed 30 January 2007, via Google Scholar <www.media-culture.org.au/0304/06-sharingfoxtel.php>
- 2004, *Media technologies and the reconfiguration of the everyday family home*, paper presented to Cultural Studies Association of Australasia, Fremantle, Western Australia, 9–11 December 2004, <www.mcc.murdoch.edu.au/cfel/csaa_proceedings.htm>
- Holloway, D. & Green, L. 2003, 'The Sesame Street effect: work, study, play and the family internet', paper presented to Australian and New Zealand Communications Association, Brisbane, July 2003, <<http://smealsearch2.psu.edu/20158.html>>
- Holloway, D., Green, L. & Quin, R. 2004, 'What porn?: children and the family internet', *M/C Journal*, vol. 7, no. 4, viewed 20 December 2006, <www.media-culture.org.au/0410/02_children.php>
- Holloway, S. & Valentine, G. 2003, *Cyberkids: youth identities and communities in an on-line world*, Routledge Falmer, London
- Holmstrom, A. 2004, 'The effects of the media on body image: a meta-analysis', *Journal of Broadcasting & Electronic Media*, vol. 48, no. 2, pp. 196–218

- Hopkins, D., Briss, P., Ricard, C., Husten, C., Carande-Kulis, V., Fielding, J., Alao, M., McKenna, J., Sharp, D., Harris, J., Woollery, T. & Harris, K. 2001, 'Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke', *American Journal of Preventive Medicine*, vol. 20, no. 2, pp. 16–66
- Horrigan, J. 2006, 'Portraits of American internet use: findings from the Pew Internet and American Life project', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford
- Huesmann, L.R. 1986, 'Psychological processes promoting the relation between exposure to media violence and aggressive behaviour by the viewer', *Journal of Social Issues*, vol. 42, no. 3, pp. 125–39
- Huesmann, L.R. & Eron, L. (eds) 1986, *Television and the aggressive child: a cross-national comparison*, Erlbaum, Hillsdal, NJ
- Huesmann, L.R., Lagerspetz, K. & Eron, L. 1984, 'Intervening variables in the TV violence-aggression relation: evidence from two countries', *Developmental Psychology*, vol. 20, no. 5, pp. 746–75
- Huesmann, L.R. & Miller, L. 1994, 'Long-term effects of repeated exposure to media violence in childhood', in L.R. Huesmann (ed.), *Aggressive behavior: current perspectives*, Plenum Press, New York, pp. 153–83
- Huesmann, L.R., Moise, J. & Podolski, C. 1997, 'The effects of media violence on the development of antisocial behavior', in D. Stoff, J. Breiling & J. Maser (eds), *Handbook of antisocial behavior*, John Wiley & Sons, New York, pp. 181–93
- Huesmann, L.R., Moise-Titus, J., Podolski, C. & Eron, L. 2003, 'Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977–1992', *Developmental Psychology*, vol. 39, pp. 201–21
- Huffaker, D. 2004, 'Spinning yarns around a digital fire: storytelling and dialogue among youth on the internet', *Information Technology in Childhood Education Annual*, vol. 1
- Huffaker, D. & Calvert, S. 2005, 'Gender, identity, and language use in teenage blogs', *Journal of Computer-Mediated Communication*, vol. 10, no. 2
- Huhman, M., Potter, L., Wong, F., Banspach, S., Duke, J.C. & Heitzler, C. 2005, 'Effects of mass media to increase physical activity among children: year-1 results of the VERB campaign', *Pediatrics*, vol. 116, no. 2, pp. e277–84
- Humphreys, S. 2003, 'Online multiuser games: playing for real', *Australian Journal of Communications*, vol. 30, no. 1, pp. 79–91
- Huston, A.C., Anderson, D., Wright, J., Linebarger, D. & Schmitt, K. 2000, 'Sesame Street viewers as adolescents: the Recontact Project', in S. Fisch & R. Truglio (eds), *"G" is for growing; thirty years of research on children and Sesame Street*, Lawrence Erlbaum, Mahwah, NJ, pp. 131–44
- 2000, 'Sesame Street viewers as adolescents: the Recontact Project', in S. Fisch & R. Truglio (eds), *"G" is for growing; thirty years of research on children and Sesame Street*, Lawrence Erlbaum, Mahwah, NJ, pp. 131–44
- Huston, A.C., Bickham, D., Lee, J. & Wright, J. 2007, 'From attention to comprehension: how children watch and learn from television', in N. Pecora, J. Murray & E. Wartella (eds), *Children and television: fifty years of research*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 41–64

- Huston, A.C., Wartella, E. & Donnerstein, E. 1998, *Measuring the effects of sexual content in the media*, Henry J. Kaiser Family Foundation, Menlo Park, CA
- Hylmo, A. 2005, *Organizing girls on film?: a critical examination of organizational socialization messages found in motion pictures targeting teenage girls*, paper presented to 55th Annual Conference of the International Communication Association, New York
- Ito, M. 2006, 'Japanese media mixes and amateur cultural exchange', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 49–66
- Ito, M. & Okabe, D. 2006, 'Intimate connections: contextualizing Japanese youth and mobile messaging', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford, pp. 235–47
- Itzin, C. (ed.) 2000, *Home truths about child sexual abuse: a reader*, Routledge, London
- 2002, 'Pornography and the construction of misogyny', *Journal of Sexual Aggression*, vol. 8, no. 3, pp. 4–42
- Ivory, J. 2006, 'Still a man's game: gender representation in online reviews of video games', *Mass Communication & Society*, vol. 9, no. 1, pp. 103–14
- Jacka, M. 2002, *Cultural diversity in Australian television drama*, Creative Industries Research and Applications Centre, Queensland University of Technology, Brisbane
- Jackson, L., Von Eye, A., Biocca, F., Barbatsis, G., Zhao, Y. & Fitzgerald, H. 2006a, 'Children's home internet use: antecedents and psychological, social and academic consequences', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford, pp. 145–67
- 2006b, 'Does home internet use influence the academic performance of low-income children?' *Developmental Psychology*, vol. 42, no. 3, pp. 429–35
- James, A., Jenks, C. & Prout, A. 1998, *Theorizing childhood*, Polity, Cambridge
- James, A. & Prout, A. 1997, *Constructing and reconstructing childhood: contemporary issues in the sociological study of childhood*, Routledge, London
- Janssen, I., Katzmarzyk, P., Boyce, W.F., Vereecken, C., Mulvihill, C., Roberts, C., Currie, C. & Pickett, W. 2005, 'Comparison of overweight and obesity prevalence in school-aged youth from 34 countries and their relationship with physical activity and dietary patterns', *Obesity Reviews*, vol. 6, no. 2, pp. 123–32
- Jarvis, C. 2001, 'School is hell: gendered fears in teenage horror', *Educational Studies*, vol. 27, no. 3, pp. 257–67
- Jenkins, H. 1992, *Textual poachers: television fans and participatory culture*, Routledge, New York
- (ed.) 1998, *The children's culture reader*, New York University Press, New York
- 2006a, 'The war between effects and meaning: rethinking the video game violence debate', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 19–32
- 2006b, *Fans, bloggers, and gamers: media consumers in a digital age*, New York University Press, New York

- 2006c, *Convergence culture: where old and new media collide*, New York University Press, New York
- Jerslev, A. 2001, “‘Video nights’”: young people watching videos together—a youth cultural phenomenon’, *Young*, vol. 9, no. 2, pp. 2–17
- John, D.R. 1999, ‘Consumer socialization of children: a retrospective look at twenty-five years of research’, *The Journal of Consumer Research*, vol. 26, no. 3, pp. 183–213
- Johnson, J., Cohen, P., Kasen, S., First, M. & Brook, J. 2004, ‘Association between television viewing and sleep problems during adolescence and early adulthood’, *Archives of Pediatrics & Adolescent Medicine*, vol. 158, no. 6, pp. 562–8
- Jones, J., Bennett, S., Olmsted, M., Lawson, M. & Rodin, G. 2001, ‘Disordered eating attitudes and behaviours in teenaged girls: a school-based study’, *Canadian Medical Association Journal*, vol. 165, no. 5, pp. 547–52
- Jones, S. 2002, ‘Music that moves: popular music, distribution and network technologies’, *Cultural Studies*, vol. 16, no. 2, pp. 213–32
- Josephson, W. 1987, ‘Television violence and children’s aggression: testing the priming, social script and disinhibition predictions’, *Journal of Personality and Social Psychology*, vol. 53, no. 5, pp. 882–90
- Josselson, R. 1980, ‘Ego development in adolescence’, in J. Adelson (ed.), *Handbook of Adolescent Psychology*, John Wiley, New York, pp. 140–67
- Juul, J. 2005, *Half-real: video games between real rules and fictional worlds*, MIT Press, Cambridge, MA
- Kaiser Family Foundation 2004, *The role of the media in childhood obesity*, The Henry J. Kaiser Family Foundation, Washington DC
- Karlynn, K. 2003, ‘Scream, popular culture, and feminism’s third wave: “I’m not my mother”’, *Genders Online Journal*, vol. 38, viewed 2 March 2007, <www.genders.org/g38/g38_rove_karlynn.html>
- Kasesniemi, E.-L. & Rautiainen, P. 2002, ‘Mobile culture of children and teenagers in Finland’, in J. Katz & M. Aakhus (eds), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, UK, pp. 170–92
- Katz, J. & Aakhus, M. (eds) 2002, *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge
- Keddie, A. & Churchill, R. 1999, ‘Young adolescents’ gender-related perceptions of television’, *Australian Journal of Communication*, vol. 26, no. 1, pp. 87–106
- Keel, M. 2004, *Family violence and sexual assault in indigenous communities: ‘walking the talk’*, 4, Australian Institute of Family Studies, Australian Centre for the Study of Sexual Assault
- Kelley, P., Buckingham, D. & Davies, H. 1999, ‘Talking dirty: children, sexual knowledge and television’, *Childhood*, vol. 6, no. 2, pp. 221–42
- Keski-Rahkonen, A. & Tozzi, F. 2005, ‘The process of recovery in eating disorder sufferers’ own words: an internet-based study’, *International Journal of Eating Disorders*, vol. 37 Suppl, pp. S80–6; discussion S7–9
- Kibby, M. 1999, ‘The didj and the web: networks of articulation and appropriation’, *Convergence*, vol. 5, no. 1, pp. 59–75

- 2001, 'Women and internet sex entertainment: discourses of gender and power', *Mots Pluriels*, vol. 19, no. October 2001, viewed 21 February 2007, <www.arts.uwa.edu.au/MotsPluriels/MP1901mk.html>
- 2003, 'Shared files: the new record collection', *M/C Journal of Media & Culture*, vol. 6, no. 8, viewed 23 February 2007, <www.media-culture.org.au/0304/05-sharedfiles.html>
- 2006, 'Radio that listens to me: Y!Music web radio', *Australian Journal of Emerging Technologies and Society*, vol. 4, no. 2, pp. 81–93
- Kids Help Line 2005, *Child abuse 2003–2004: fact sheet*, Kids Help Line, Red Hill, Qld
- Kiewitz, C. & Weaver, J. 2001, 'Trait aggressiveness, media violence, and perceptions of interpersonal conflict', *Personality and Individual Differences*, vol. 31, no. 6, pp. 821–35
- King, M. 2001, 'Cross-sectional and longitudinal research designs issues in the study of human development', *Graduate Research in Nursing*, vol. 3, no. 1, pp. 1–6
- King, M. & Multon, K. 1996, 'The effects of television role models on the career aspirations of African American junior high school students', *Journal of Career Development*, vol. 23, no. 2, pp. 111–25
- Kirriemuir, J. & McFarlane, A. 2004, *Literature review in games and learning*, Report 8, Futurelab: Watershed Media Centre, Bristol
- Kirsh, S. 2003, 'The effects of violent video games on adolescents – the overlooked influence of development', *Aggression and Violent Behavior*, vol. 8, no. 4, pp. 377–89
- Kline, S. 1993, *Out of the garden: toys, TV and children's culture in the age of marketing*, Verso, London
- 2000, 'Killing time: a Canadian meditation on video game culture', in C. von Feilitzen & U. Carlsson (eds), *Children in the new media landscape: games, pornography, perceptions*, Nordicom, Göteborg, SW, pp. 35–60
- 2003, 'Media effects: redux or reductive?' *Particip@tions*, vol. 1, no. 1, viewed 3 March 2007, <www.participations.org/volume%201/issue%201/1_01_kline_reply.htm>
- 2005, 'Countering children's sedentary lifestyles: an evaluative study of a media-risk education approach', *Childhood*, vol. 12, no. 2, pp. 239–58
- Kotz, K. & Story, M. 1994, 'Food advertisements during children's Saturday morning television programming: are they consistent with dietary recommendations?' *Journal of the American Dietetic Association*, vol. 94, pp. 1,296–300
- Kovacs, K. & Richardson, N. 2004, *Child abuse statistics*, 1, Australian Institute of Family Studies
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T. & Scherlis, W. 1998, 'Internet paradox: a social technology that reduces social involvement and psychological well-being?' *American Psychologist*, vol. 53, no. 9, pp. 1,017–31
- Kress, G. & van Leeuwen, T. 2001, *Multimodal discourse: the modes and media of contemporary communication*, Arnold, London
- Krone, T. 2005a, *Child exploitation*, Australian Institute of Criminology
- 2005b, *Does thinking make it so?: defining child pornography possession offences*, Australian Institute of Criminology

- 2005c, 'Operation Auxin: the Australian response to online child exploitation', *Royal Canadian Mounted Police Gazette*, vol. 67, no. 3
- 2005d, *QLD police stings in online chat rooms*, 301, Australian Institute of Criminology
- Krotoski, A. 2004, *Chicks and joysticks: an exploration of women and gaming*, Education and Software Association Publishers Association, London
- Lachlan, K., Smith, S. & Tamborini, R. 2005, 'Models for aggressive behavior: the attributes of violent characters in popular video games', *Communication Studies*, vol. 56, no. 4, pp. 313–29
- Lahti, M. 2003, 'As we become machines: corporealized pleasures in video games', in M. Wolf & B. Perron (eds), *The video game theory reader*, Routledge, New York, p. 157,170
- Laughey, D. 2006, *Music and youth culture*, Edinburgh University Press, Edinburgh
- Lavoie, F., Robitaille, L. & Herbert, M. 2000, 'Teen dating relationships and aggression: an exploratory study', *Violence Against Women*, vol. 6, no. 1, pp. 6–36
- Lefkowitz, M., Eron, L., Walder, L. & Huesmann, L.R. 1977, *Growing up to be violent: a longitudinal study of the development of aggression*, Pergamon Press, New York
- Lenhart, A., Rainie, L. & Lewis, O. 2001, *Teenage life online: the rise of instant messaging and the internet's impact on friendship and family relationships*, Pew Internet & American Life Project, Washington, DC
- Levine, J. 2002, *Harmful to minors: the perils of protecting children from sex*, University of Minnesota Press, Minneapolis
- Leyens, J., Camino, L., Parke, R. & Berkowitz, L. 1975, 'Effects of movie violence on aggression in a field setting as a function of group dominance and cohesion', *Journal of Personality and Social Psychology*, vol. 32, pp. 346–60
- Lin, C. & Atkin, D. 1989, 'Parental mediation and rulemaking for adolescent use of television and VCRs', *Journal of Broadcasting & Electronic Media*, vol. 33, no. 1, pp. 53–67
- Lindquist, C., Gower, B. & Goran, M. 2000, 'Role of dietary factors in ethnic differences in early risk of cardiovascular disease and type 2 diabetes', *American Journal of Clinical Nutrition*, vol. 71, pp. 725–32
- Lindstrom, M. 2004, 'Branding is no longer child's play!', *Journal of Consumer Marketing*, vol. 21, no. 3, pp. 175–82
- Ling, R. 2004, *The mobile connection: the cell phone's impact on society*, The Morgan Kaufmann series in interactive technologies, Elsevier, Amsterdam
- 2005, 'The sociolinguistics of SMS: an analysis of SMS use by a random sample of Norwegians', in *Mobile communications: re-negotiation of the social sphere*, Springer, London, pp. 335–49
- Ling, R. & Haddon, L. 2003, 'Mobile telephony, mobility and the coordination of everyday life', in *Machines that become us: the social context of personal communication technology*, pp. 245–65
- Ling, R. & Helmersen, P. 2000, *It must be necessary, it has to cover a need: the adoption of mobile telephony among pre-adolescents and adolescents*, paper presented to Social Consequences of Mobile Telephony, Telenor R&D, Oslo, Norway, 16 June 2000, <http://richardling.com/papers/2000_necessary_need.pdf>

- Ling, R. & Thrane, K. 2001, “‘It actually separates us a little bit, but I think that is an advantage’”: the management of electronic media in Norwegian households’, paper presented to e-usages, Paris, 12–14 June 2001, <[www.telenor.no/fou/program/nomadiske/articles/rich/\(2001\)Itactually.pdf](http://www.telenor.no/fou/program/nomadiske/articles/rich/(2001)Itactually.pdf)>
- Ling, R. & Yttri, B. 2002, ‘Hyper-coordination via mobile phones in Norway’, in J. Katz & M. Aakhus (eds), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, pp. 139–69
- 2006, ‘Control, emancipation and status: the mobile telephone in the teen’s parental and peer group control relationships’, in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford
- 2006, ‘Control, emancipation and status: the mobile telephone in the teen’s parental and peer group control relationships’, in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford
- Linz, D., Donnerstein, E. & Penrod, S. 1988, ‘Effects of long-term exposure to violent and sexually degrading depictions of women’, *Journal of Personality and Social Psychology*, vol. 55, no. 5, pp. 758–68
- Livingstone, S. 2002, *Young people and new media: childhood and the changing media environment*, Sage, London
- 2003, ‘The changing nature of audiences: from the mass audience to the interactive media user’, in *Companion to media studies*, Blackwell Publishing, Oxford, UK, pp. 337–59
- 2006a, ‘Children’s privacy online: experimenting with boundaries within and beyond the family’, in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology*, Oxford University Press, Oxford
- 2006b, ‘Drawing conclusions from new media research: reflections and puzzles regarding children’s experience of the internet’, *Information Society*, vol. 22, no. 4, pp. 219–30
- Livingstone, S. & Bober, M. 2004a, *Active participation or just more information?: young people’s take up of opportunities to act and interact on the internet*, London School of Economics and Political Science, London
- 2004b, *UK children go online: surveying the experiences of young people and their parents*, London School of Economics and Political Science, London
- 2005, *UK children go online: final report of key project findings*, London School of Economics and Political Science, London
- 2006, ‘Regulating the internet at home: contrasting the perspectives of children and parents’, in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 93–114
- Livingstone, S., Bober, M. & Helsper, E. 2005, *Inequalities and the digital divide in children and young people’s internet use: findings from the UK Children Go Online project*, London School of Economics and Political Science, London
- Livingstone, S. & Bovill, M. 1999b, *Young people, new media: final report of the project ‘children, young people and the changing media environment’*, London School of Economics and Political Science, London
- 2001, *Families and the internet: an observational study of children and young people’s internet use*, London School of Economics & Political Science, London

- Loges, W. & Jung, J. 2001, 'Exploring the digital divide: internet connectedness and age', *Communication Research*, vol. 28, no. 4, pp. 536–62
- Luke, C. 1990, *Constructing the child viewer: a history of the American discourse on television and children, 1950–1980*, Praeger, New York
- 2001, 'New times, new media: where to media education?' *Media International Australia incorporating Culture and Policy*, vol. 101, pp. 87–100
- Lull, J. 1990, *Inside family viewing: ethnographic research on television's audiences*, Routledge, London
- Lumby, C. 1997, *Bad girls: the media, sex and feminism in the 90s*, Allen & Unwin, St. Leonards, NSW
- Mackay, H. & Ivey, D. 2004, *Modern media in the home: an ethnographic study*
- Mackey, M. 2002, *Literacies across media: playing the text*, Routledge Falmer, London
- 2006, 'Digital games and the narrative gap', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 33–48
- Maglin, N. & Perry, D. (eds) 1996, "*Bad girls*"/"*good girls*": *women, sex and power in the nineties*, Rutgers University Press, New Brunswick, NJ
- Malamuth, N., Addison, T. & Koss, M. 2000, 'Pornography and sexual aggression: are there reliable effects and can we understand them?', *Annual Review of Sex Research*, vol. 11
- Malamuth, N. & Huppin, M. 2005, 'Pornography and teenagers: the importance of individual differences', *Adolescent Medical Clinics*, vol. 16, no. 2, pp. 315–26
- Malamuth, N. & Impett, E. 2001, 'Research on sex in the media', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 269–87
- Marshall, S., Gorely, T. & Biddle, S. 2006, 'A descriptive epidemiology of screen-based media use in youth: a review and critique', *Journal of Adolescence*, vol. 29, no. 3, pp. 333–49
- 2006, 'A descriptive epidemiology of screen-based media use in youth: a review and critique', in *Journal of Adolescence*, vol. 29, no. 3, pp. 333–49
- Martin, B. & Collins, B. 2002, 'Violence and consumption imagery in music videos', *European Journal of Marketing*, vol. 36, no. 7, pp. 855–73
- Martinez-Gonzalez, M., Gual, P., Lahortiga, F., Alonso, Y., de Irala-Estevez, J. & Cervera, S. 2003, 'Parental factors, mass media influences, and the onset of eating disorders in a prospective population-based cohort', *Pediatrics*, vol. 111, no. 2, pp. 315–20
- Masters, C. 2006, *Jonestown: the power and the myth of Alan Jones*, Allen & Unwin, Sydney
- Mastro, D. & Kopacz, M. 2006, 'Media representations of race, prototypicality, and policy reasoning: an application of self-categorization theory', *Journal of Broadcasting & Electronic Media*, vol. 50, no. 2, pp. 305–22
- Mastro, D. & Robinson, A. 2000, 'Cops and crooks: images of minorities on primetime television', *Journal of Criminal Justice*, vol. 28, no. 5, pp. 385–96
- Mastro, D. & Stern, S. 2003, 'Representations of race in television commercials: a content analysis of prime-time advertising', *Journal of Broadcasting & Electronic Media*, vol. 47, no. 4, pp. 635–44

- Matheson, D., Killen, J., Wang, Y., Varady, A. & T., R. 2004, 'Children's food consumption during television viewing', *American Journal of Clinical Nutrition*, vol. 79, no. 6, pp. 1,088–94
- Mazzarella, S. (ed.) 2005, *Girl wide web: girls, the internet, and the negotiation of identity*, Peter Lang
- McAvan, E. 2006, "'Boulevard of broken songs': mash-ups as textual re-appropriation of popular music culture", *M/C: A Journal of Media Culture*, vol. 9, no. 6, viewed 12 January 2007, <<http://journal.media-culture.org.au/0612/02-mcavan.php>>
- McClary, S. 1994, 'Same as it ever was: youth culture and music', in A. Ross & T. Rose (eds), *Microphone fiends: youth music and youth culture* Routledge, New York, pp. 29–40
- McGregor, C. 1993, 'Growing up (uncool): pop music and youth culture in the '50s and '60s', in P. Hayward (ed.), *From pop to punk to postmodernism: popular music and Australian culture from the 1960s to the 1990s*, Allen & Unwin, Sydney
- McLeod, J. 2000, 'Media and civic socialization of youth', *Journal of Adolescent Health*, vol. 27, no. 2, pp. 45–51
- McMahan, A. 2003, 'Immersion, engagement and presence: a method for analyzing 3-D video games', in M. Wolf & B. Perron (eds), *The video game theory reader*, Routledge, New York, pp. 67–86
- McQuail, D. 1994, *Mass communication theory*, Sage, London
- 2005, *McQuail's mass communication theory*, 5th edn, Sage, London
- Medrich, E. 1979, 'Constant television: a background to daily life', *Journal of Communication*, vol. 29, no. 3, pp. 171–6
- Medrich, E., Roizen, I., Rubin, V. & Buckley, S. 1982, *The serious business of growing up: a study of children's lives outside school*, University of California Press, Los Angeles, CA
- Mensch, G. 2005, 'Youth pornographic consumption: how similar and different from other internet users', Oxford Internet Institute
- Meyer, M. 2003, "'It's me. I'm it": defining adolescent sexual identity through relational dialectics in Dawson's Creek', *Communication Quarterly*, vol. 51, no. 3, pp. 262–76
- Michaels, E. 1987, *For a cultural future: Francis Jupurrurla makes TV at Yuendumu*, Artspace, Sydney
- Miller, B. 1990, *Royal commission into Aboriginal deaths in custody: submission from the Aboriginal co-ordinating council*, Aboriginal Co-ordinating Council, Cairns
- Millwood Hargrave, A. 2000, *Listening 2000*, Radio Authority, London
- 2002, *Multicultural broadcasting: concept and reality*, British Broadcasting Corporation, British Standards Commission, Independent Television Commission, Radio Authority, London
- 2003, *How children interpret screen violence*, British Broadcasting Commission, British Board of Film Classification, Broadcasting Standards Commission, Independent Television Commission, London
- Millwood Hargrave, A. & Livingstone, S. 2006, *Harm and offence in media content: a review of the evidence*, Intellect Books, Bristol, UK

- Mitchell, A. & Savill-Smith, C. 2004, *The use of computer and video games for learning*, Learning Skills Development Agency, London
- Mitchell, K., Finkelhor, D. & Wolak, J. 2003, 'The exposure of youth to unwanted sexual material on the internet: a national survey of risk, impact, and prevention', *Youth & Society*, vol. 34, no. 3, pp. 330–58
- Modan-Moses, D., Yaroslavsky, A., Novikov, I., Segev, S., Toledano, A., Miterany, E. & Stein, D. 2003, 'Stunting of growth as a major feature of anorexia nervosa in male adolescents', *Pediatrics*, vol. 111, no. 2, pp. 270–6
- Montgomery, K. 2001, 'Digital kids: the new on-line children's consumer culture', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 640–3
- Montgomery, K. & Gottlieb-Robles, B. 2006, 'Youth as e-citizens: the internet's contribution to civic engagement', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 131–48
- Morley, D. 1980, *The 'Nationwide' audience: structure and decoding*, BFI Television Monograph 11, British Film Institute, London
- 1988, *Family television: cultural power and domestic leisure*, Routledge, London
- Morris, S. 2004, 'Co-creative media: online multiplayer computer game culture', *Scan*, vol. 1, no. 1
- Mullin, C. & Linz, D. 1995, 'Desensitization and resensitization to violence against women: effects of exposure to sexually violent films on judgments of domestic violence victims', *Journal of Personality and Social Psychology*, vol. 69, no. 3, pp. 449–59
- Murphy, R., Frost, S., Webster, P. & Schmidt, U. 2004, 'An evaluation of web-based information', *International Journal of Eating Disorders*, vol. 35, no. 2, pp. 145–54
- Murray, J. 1997, 'Media violence and youth', in J. Osofsky (ed.), *Children in a Violent Society*, New York: Guilford, pp. 72–96
- Murray, J.H. 1997, *Hamlet on the holodeck: the future of narrative in cyberspace*, The Free Press, New York
- Mutz, D., Roberts, D. & Van Vuuren, D. 1993, 'Reconsidering the displacement hypothesis: television's influence on children's time use', *Communication Research*, vol. 20, no. 1, pp. 51–75
- Nafus, D. & Tracey, K. 2002, 'Mobile phone consumption and concepts of personhood', in J. Katz & M. Aakhus (eds), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, UK, pp. 206–21
- Nathanson, A. & Botta, R. 2003, 'Shaping the effects of television on adolescents' body image disturbance: the role of parental mediation', *Communication Research*, vol. 30, no. 3, pp. 304–31
- NetRatings Australia 2005, *kidsonline@home: internet use in Australian homes*, Australian Broadcasting Authority & NetAlert Ltd, Sydney
- Netsafe 2005, *The text generation: mobile phones and New Zealand youth: a report of results from the Internet Safety Group's survey of teenage mobile phone use*, viewed 15 September 2006, <www.netsafe.org.nz/Doc_Library/publications/text_generation_v2.pdf>

- Neuman, W. 2006, *Social research methods: qualitative and quantitative approaches*, Pearson, Boston
- Nightingale, V. 1993, 'The vulnerable audience: effects traditions', in S. Cunningham & G. Turner (eds), *The media in Australia: industries, texts, audiences*, Allen & Unwin, Sydney, pp. 281–5
- 1996, *Studying audiences: shock of the real*, Routledge, London
- Nightingale, V. & Griff, C. 2000, *Children's views about media harm: a collaborative project between the University of Western Sydney and the Australian Broadcasting Authority*, Monograph 10, Australian Broadcasting Authority, Sydney
- Noble, G. 1975, *Children in front of the small screen*, Sage, Beverly Hills, CA
- 1983, 'Social learning from everyday television', in M. Howe (ed.), *Learning from television: psychological and educational research*, Academic Press, London
- Noble, G. & Noble, E. 1979, 'A study of teenagers uses and gratifications of the "Happy Days" show', *Media Information Australia*, vol. 11, pp. 17–23
- Norris, P. 2001, *Digital divide: civic engagement, information poverty, and the internet worldwide*, Cambridge University Press, Cambridge, UK
- Notley, T. & Tacchi, J. 2004, *The creative potential of new media technologies: Youth Internet Radio Network*, paper presented to Cultural Studies Association of Australia, Murdoch University, Perth Western Australia, 9–11 December 2004, <<http://eprints.qut.edu.au/archive/00003789/>>
- Nowra, L. 2007, 'Culture of denial', *The Australian*, 7 March 2007
- NSW Department of Health 2002, 'New South Wales child health survey 2001', *NSW Public Health Bulletin*, vol. 13, p. s4
- NTVS 1996, *National television violence study*, vol. 1, National Television Violence Study, Mediascope, Thousand Oaks, CA
- 1997, *National television violence study*, vol. 2, National Television Violence Study, Sage, Thousand Oaks, CA
- 1998, *National television violence study*, vol. 3, National Television Violence Study, University of California, Santa Barbara, Center for Communication and Social Policy, Santa Barbara, CA
- Nugent, S., Loncar, M., Aisbett, K., Millwood Hargrave, A., Porritt, D., Scott, K. & Godfrey, L. 1993, *The people we see on TV: cultural diversity on television*, 3, Australian Broadcasting Authority, North Sydney
- O'Connell, R. 2000, 'Child sex iconography: iconic narratives of child sex myths', in C. von Feilitzen & U. Carlsson (eds), *Children in the new media landscape: games, pornography, perceptions*, Nordicom, Göteborg, SW, pp. 211–32
- 2003, *A typology of child cybersexexploitation and online grooming practices*, University of Central Lancashire, Cyberspace Research Unit
- O'Connell, R., Price, J. & Barrow, C. 2004, *Cyber stalking, abusive sex: cyber sex and online grooming*, University of Central Lancashire, Cyberspace Research Unit
- Ofcom 2005a, *The representation and portrayal of people with disabilities on analogue terrestrial television: content analysis research report*, Ofcom: Office of Communications, London

- 2005b, *Research into the effectiveness or PIN protection systems in the UK: a report of the key findings of research among school children aged 11–17, and a separate study of parents*, Ofcom/Youth Research Group, London
- 2006, *The communications market 2006: 2 radio*, Ofcom: Office of Communication, London
- Ogbar, J. 1999, 'Slouching towards Bork: the culture wars and self-criticism in hip-hop music', *Journal of Black Studies*, vol. 30, no. 2, pp. 164–83
- Oliver, M. & Pelletier, C. 2006, 'Activity theory and learning from digital games: developing and analytical methodology', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 67–88
- Olson, C. 2004, 'Media violence research and youth violence data: why do they conflict?' *Journal of Academic Psychiatry*, vol. 28, no. 2, pp. 144–50
- Orr, D., Beiter, M. & Ingersoll, G. 1991, 'Premature sexual activity as an indicator of psychosocial risk', *Pediatrics*, vol. 87, no. 2, pp. 141–7
- Orr, D. & Stack-Ferrigno, J. 2001, 'Childproofing on the world wide web: a survey of adult webserver', *Jurimetrics*, vol. 41, no. 4, pp. 465–75
- Oswell, D. 2007, 'Media and communications regulation and child protection: an overview of the field', in S. Livingstone & K. Drotner (eds), *International handbook of children, media and culture*, Sage, London
- Owens, J., Maxim, R., McGuinn, M., Nobile, C., Msall, M. & Alario, A. 1999, 'Television-viewing habits and sleep disturbance in school children', *Pediatrics*, vol. 104, no. 3, p. e27
- Paavonen, E., Pennonen, M., Roine, M., Valkonen, S. & Lahikainen, A. 2006, 'TV exposure associated with sleep disturbances in 5- to 6-year-old children', *Journal of Sleep Research*, vol. 15, no. 2, pp. 154–61
- Paik, H. & Comstock, G. 1994, 'The effects of television violence on antisocial behavior: a meta-analysis', *Communication Research*, vol. 21, no. 4, pp. 516–46
- Palmer, P. 1986, *The lively audience: a study of children around the TV set*, Allen & Unwin, Sydney
- Pardun, C. 2002, 'Romancing the script: identifying the romantic agenda in top-grossing movies', in J.D. Brown, J. Steele & K. Walsh-Childers (eds), *Sexual teens, sexual media: investigating media's influence on adolescent sexuality*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 211–26
- Pardun, C., L'Engle, K. & Brown, J.D. 2005, 'Linking exposure to outcomes: early adolescents' consumption of sexual content in six media', *Mass Communication & Society*, vol. 8, no. 2, p. 75
- Parke, R., Berkowitz, L., Leyens, J., West, S. & Sebastian, R. 1977, 'Some effects of violent and nonviolent movies on the behavior of juvenile delinquents', in L. Berkowitz (ed.), *Advances in experimental social psychology*, Academic Press, New York, vol. 10, pp. 135–72
- Parliament of Victoria 2006, *Education in the net age—new needs & new tools: report on the inquiry into the effects of television and multimedia on education in Victoria*, Parliament of Victoria, Education and Training Committee

- Pasquier, D. 2001, 'Media at home: domestic interactions and regulation', in S. Livingstone & M. Bovill (eds), *Children and their changing media environment: a European comparative study*, Lawrence Erlbaum Associates, Mahwah, NJ
- Patton, G., Coffey, C. & Sawyer, S. 2003, 'The outcome of adolescent eating disorders: findings from the Victorian adolescent health cohort study', *European Child & Adolescent Psychiatry*, vol. 12, no. Suppl1, pp. i25–i9
- Patton, T. 2001, 'Ally McBeal and her homes: the reification of white stereotypes of the other', *Journal of Black Studies*, vol. 32, no. 2, pp. 229–60
- Paulk, C. 2006, 'Signifying play: The Sims and the sociology of interior design', *Game Studies: The International Journal of Computer Game Research*, vol. 6, no. 1, viewed 2 March 2007, <<http://gamestudies.org/0601/articles/paulk>>
- Paxton, S., Wertheim, E., Gibbons, K., Szmukler, G., Hillier, L. & Petrovich, J. 1991, 'Body image satisfaction, dieting beliefs, and weight loss behaviors in adolescent girls and boys', *Journal of Youth and Adolescence*, vol. 20, no. 3, pp. 361–79
- Pearson, C. 2007, 'Facing cultural reality', *The Australian*, 24 March 2007
- Pecora, N., Murray, J. & Wartella, E. (eds) 2007, *Children and television: fifty years of research*, Lawrence Erlbaum Associates, Mahwah, NJ
- Pennell, A. & Browne, K. 1999, 'Film violence and young offenders—a psychologist's view', *Journal of Aggression and Violent Behaviour*, vol. 4, no. 1, pp. 13–28
- Perry, R. 2004, *NYCLU cautions over proposals to limit sales of video games to minors: testimony of Robert Perry on behalf of the New York Civil Liberties Union before the New York City Council's Committee on Consumer Affairs regarding Int. No. 18 and Int. No. 60 in relation to the sale, commercial display and enforcement of ratings of violent video games to minors*, New York Civil Liberties Union, viewed 7 March 2007, <www.nyclu.org/video_games_testimony_033004.html>
- Piaget, J. 1950, *The psychology of intelligence*, Routledge & Kegan Paul, London
- Pimentel, R. & Reynolds, K. 2004, 'A model for consumer devotion: affective commitment with proactive sustaining behaviors', *Academy of Marketing Science Review*, vol. 5, pp. 1–45
- Pine, K. & Nash, A. 2003, 'Barbie or Betty?: preschool children's preference for branded products and evidence for gender-linked differences', *Journal of Developmental Behaviour Pediatrics*, vol. 24, no. 4, pp. 423–36
- Poindexter, P., Smith, L. & Heider, D. 2003, 'Race and ethnicity in local television news: framing, story assignments, and source selections', *Journal of Broadcasting & Electronic Media*, vol. 47, no. 4, pp. 524–36
- Polak, M. 2006, 'It's a gURL thing: community versus commodity in girl-focused netpace', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 177–92
- Pool, M., Koolstra, C. & Van Der Voort, T. 2003, 'Distraction effects of background soap operas on homework performance: an experimental study enriched with observational data', *Educational Psychology*, vol. 23, no. 4, pp. 361–80
- Pool, M., Van Der Voort, T., Beentjes, J. & Koolstra, C. 2000, 'Background television as an inhibitor of performance on easy and difficult homework assignments', *Communication Research*, vol. 27, no. 3, pp. 293–326

- Poran, M. 2006, 'The politics of protection: body image, social pressures, and the misrepresentation of young black women', *Sex Roles*, vol. 55, no. 11–12, pp. 739–55
- Potts, J. 1989, *Radio in Australia*, New South Wales University Press, Kensington, NSW
- Quinn, J. & Forsyth, C. 2005, 'Describing sexual behavior in the era of the internet: a typology for empirical research', *Deviant Behavior*, vol. 26, no. 3, pp. 191–207
- Qvortrup, J. (ed.) 1994, *Childhood matters: social theory, practice and politics*, Avery, Aldershot
- Renaud, S. 2001, 'Diet and stroke', *Journal of Nutrition Health and Aging*, vol. 5, pp. 167–72
- Rennie, K. & Livingstone, M. 2007, 'Associations between dietary added sugar intake and micronutrient intake: a systematic review', *British Journal of Nutrition*, vol. 97, no. 5, pp. 832–41
- Ribisl, K. 2003, 'The potential of the internet as a medium to encourage and discourage youth tobacco use', *Tobacco Control*, vol. 12 Suppl 1, pp. i48–59
- Rice, R. & Haythornethwaite, C. 2006, 'Perspectives on internet use: access, involvement and interaction', in L. Lieverow & S. Livingstone (eds), *The handbook of new media: social shaping and social consequences of ICTs*, 2nd edn, Sage, London, pp. 92–113
- Richardson, J. & Scott, K. 2002, 'Rap music and its violent progeny: America's culture of violence in context', *Journal of Negro Education*, vol. 71, no. 3, pp. 175–92
- Richardson, M. 2002, 'Downloading music off the internet: copyright and privacy in conflict', *Journal of Law and Information Science*, vol. 13, no. 1, pp. 90–106
- Rideout, V. 2002, 'Generation Rx.com.: what are young people really doing online?' *Marketing Health Services*, vol. 22, pp. 26–30
- Rideout, V. & Hamel, E. 2006, *The media family: electronic media in the lives of infants, toddlers, preschoolers and their parents*, Kaiser Family Foundation, Menlo Park, CA
- Rimmer, M. 2001, 'Napster: infinite digital jukebox or pirate bazaar?' *Media International Australia incorporating Culture and Policy*, vol. 98, pp. 27–38
- Roberts, D. 1993, 'Adolescents and the mass media: from "Leave it to Beaver" to "Beverly Hills 90210"', *Teachers College Record*, vol. 94, pp. 629–44
- Roberts, D., Foehr, U. & Rideout, V. 2005, *Generation M: media in the lives of 8–18 year-olds*, Kaiser Family Foundation, Menlo Park, CA
- Roberts, D., Foehr, U., Rideout, V. & Brodie, M. 1999, *Kids & media@the new millennium: a comprehensive national analysis of children's media use*, Kaiser Family Foundation, Menlo Park, CA
- Robinson, T. 1999, 'Reducing children's television watching to prevent obesity: a randomised control trial', *Journal of the American Medical Association*, vol. 282, pp. 1,561–67
- Robinson, W. (ed.) 1996, *Social groups and identities: developing the legacy of Henri Taiffel*, Butterworth Heinemann, Boston
- Rogala, C. & Tyden, T. 2003, 'Does pornography influence young women's sexual behavior?' *Women's Health Issues*, vol. 13, no. 1, pp. 39–43
- Rowe, K. 2006, *Effective teaching practices for students with and without learning difficulties: constructivism as a legitimate theory of learning and of teaching?: background paper to keynote address*, paper presented to NSW DET Office of Schools Portfolio Forum, Wilkins Gallery, Sydney, 14 July 2006,

<www.acer.edu.au/research/programs/documents/Rowe-EffectiveTeachingPracticesJuly2006.pdf>

- Rubinstein, E. 1983, 'Television and behaviour: research conclusions of the 1982 NIMH report and their policy implications', *American Psychologist*, vol. 38, pp. 820–5
- Rush, E. & La Nauze, A. 2006, *Corporate paedophilia: sexualisation of children in Australia*, The Australia Institute, Sydney
- Russell, G. 1992, 'Response of the macho male to viewing a combatant sport', *Journal of Social Behaviour and Personality*, vol. 7, pp. 631–8
- Rutherford, L. 1999, 'Consuming the child: specularisation of the child's body in contemporary visual culture', *Southern Review: Essays in the New Humanities*, vol. 32, no. 3, pp. 292–301
- 2000, 'The cognitive paradigm and its discontents: a plea for new directions in Australian children's television research', *Papers: Explorations into Children's Literature*, vol. 10, no. 1, pp. 5–16
- 2004, 'Negotiating masculinities: Yolngu Boy', *Metro*, vol. 140, pp. 62–9
- Ryan, M.-L. 2001, *Narrative as virtual reality: immersion and interactivity in literature and electronic media*, Johns Hopkins University Press, Baltimore, MD
- Saelens, B. & Epstein, L. 1998, 'Behavioural engineering of activity choice in obese children', *International Journal of Obesity*, vol. 22, pp. 257–77
- Sancho, J. 2003, *Disabling prejudice: attitudes towards disability and its portrayal on television*, British Broadcasting Commission, Broadcasting Standards Commission, Independent Television Commission, London
- Sanford, K. & Madill, L. 2006, 'Resistance through video game play: it's a boy thing', *Canadian Journal of Education*, vol. 29, no. 1, pp. 287–306
- Sanigorski, A., Bell, A., Kremer, P. & Swinburn, B. 2005, 'Lunchbox contents of Australian school children: room for improvement', *European Journal of Clinical Nutrition*, vol. 11, pp. 1,310–6
- Schaffer, D. 2006, *How computer games help children learn*, Palgrave Macmillan, New York
- Scharrer, E. 2001, 'Tough guys: the portrayal of hypermasculinity and aggression in televised police dramas', *Journal of Broadcasting & Electronic Media*, vol. 45, no. 4, pp. 615–34
- Scharrer, E. & Leone, R. 2006, 'I know you are but what am I?: young people's perceptions of varying types of video game influence', *Mass Communication & Society*, vol. 9, no. 3, pp. 261–86
- Scheidt, L. 2006, 'Adolescent diary weblogs and the unseen audience', in D. Buckingham & R. Willett (eds), *Digital generations: children, young people and new media*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 193–210
- Schmidt, M. & Anderson, D. 2007, 'The impact of television on cognitive development and educational achievement', in N. Pecora, J. Murray & E. Wartella (eds), *Children and television: fifty years of research*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 65–84
- Schor, J. 2006, 'When childhood gets commercialized, can children be protected?' in U. Carlsson (ed.), *Regulation, awareness, empowerment: young people and harmful media content in the digital age*, Nordicom, Göteborg, SW, pp. 101–21

- Schott, G. & Kambouri, M. 2006, 'Social play and learning', in D. Carr, D. Buckingham, A. Burn & G. Schott (eds), *Computer games: text, narrative and play*, Polity Press, Cambridge, UK, pp. 119–32
- Schramm, W., Lyle, J. & Parker, E. 1961, *Television in the lives of our children*, Stanford University Press, Stanford
- Seay, A., Jerome, W., Lee, K. & Kraut, R. 2004, *Project massive: a study of online gaming communities*, paper presented to Computer Human Interaction (CHI), Vienna, Austria, 24–29 April 2004, <<http://social.cs.uiuc.edu/class/cs598kgk-04/papers/p1421-seay.pdf>>
- Sefton-Green, J. 2004, 'Initiation rites: a small boy in Poké-World', in J. Tobin (ed.), *Pikachu's global adventure: the rise and fall of Pokémon*, Duke University Press, Durham, NC, pp. 141–64
- Seiter, E. 2005, *The internet playground: children's access, entertainment, and mis-education*, Peter Lang, New York
- Seto, M. & Eke, A. 2005, 'The criminal histories and later offending of child pornography offenders', *Sexual Abuse: A Journal of Research and Treatment*, vol. 17, no. 2, pp. 201–10
- Seto, M., Maric, A. & Barbaree, H. 2001, 'The role of pornography in the etiology of sexual aggression', *Aggression and Violent Behavior*, vol. 6, no. 1, pp. 35–53
- Sharp, E. & Joslyn, M. 2001, 'Individual and contextual effects on attributions about pornography', *Journal of Politics*, vol. 63, no. 2, pp. 501–19
- Shaw, W. 2003, '(Post) colonial [1] encounters: gendered racialisations in Australian courtrooms [2]', *Gender, Place and Culture: A Journal of Feminist Geography*, vol. 10, no. 4, pp. 315–32
- Sheldon, L., Ramsay, G. & Loncar, M. 1994, '*Cool*' or '*gross*': children's attitudes to violence, kissing and swearing, Australian Broadcasting Authority, Sydney
- Sherry, J. 2001, 'The effects of violent video games on aggression: a meta-analysis', *Human Communication Research*, vol. 27, no. 3, pp. 409–31
- Shklovski, I., Kraut, R. & Kiesler, S. 2006, 'The internet and social interaction: a meta-analysis and critique of studies, 1995–2003', in R. Kraut, M. Brynin & S. Kiesler (eds), *Computers, phones, and the internet: domesticating information technology* Oxford University Press, Oxford, pp. 251–64
- Signorielli, N. 2001, 'Television's gender role images and contribution to stereotyping', in D. Singer & J. Singer (eds), *Handbook of children and the media*, Sage, Thousand Oaks, CA, pp. 341–58
- 2004, 'Aging on television: messages relating to gender, race, and occupation in prime time', *Journal of Broadcasting & Electronic Media*, vol. 48, no. 2, pp. 279–301
- Signorielli, N. & Bacue, A. 1999, 'Recognition and respect: a content analysis of prime-time television characters across three decades', *Sex Roles*, vol. 40, no. 7/8, pp. 527–44
- Silverman, R. 2001, 'What Xena giveth, Xena taketh away', *The Gay & Lesbian Review Worldwide*, vol. 8, no. 5, pp. 32–7
- Silverstone, R. 1993, 'Time, information and communication technologies in the household', *Time and Society*, vol. 2, no. 3, pp. 283–311
- 1994, *Television and everyday life*, Routledge, London

- Silverstone, R. & Haddon, L. 1996, 'Design and the domestication of information and communication technologies: technical change and everyday life', in R. Silverstone & R. Mansell (eds), *Communication by design: the politics of information and communication technologies*, Oxford University Press, Oxford, pp. 44–74
- Silverstone, R., Hirsch, E. & Morley, D. 1992, 'Information and communication technologies and the moral economy of the household', in R. Silverstone & E. Hirsch (eds), *Consuming technologies*, Routledge, London, pp. 15–31
- Singer, D. & Singer, J. 1998, 'Barney and Friends as entertainment and education: evaluating the quality and effectiveness of a television series for preschool children', in J. Asamen & G. Berry (eds), *Research paradigms in the study of television and social behavior*, Sage, Thousand Oaks, CA, pp. 305–67
- Singer, D., Singer, J. & Rapaczynski, W. 1984, 'Family patterns and television viewing as predictors of children's beliefs and aggression', *Journal of Communication*, vol. Spring, no. 73–89
- Singer, M., Anglin, T., Song, L. & Lunghofer, L. 1995, 'Adolescents' exposure to violence and associated symptoms of psychological trauma', *Journal of the American Medical Association*, vol. 273, pp. 477–82
- Singh, S. 2001, 'Gender and the use of the internet at home', *New Media & Society*, vol. 3, no. 4, pp. 395–415
- Skelton, T. & Valentine, G. (eds) 1998, *Cool places: geographies of youth cultures*, Routledge, London
- Skog, B. 2002, 'Mobiles and the Norwegian teen: identity, gender and class', in J. Katz & M. Aakhus (eds), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, UK, pp. 255–73
- Smith, S. & Boyson, A. 2002, 'Violence in music videos: examining the prevalence and context of physical aggression', *Journal of Communication*, vol. 52, no. 1, pp. 61–83
- Snyder, I. (ed.) 1998, *Page to screen: taking literacy into the electronic era*, Routledge, London
- Somerset, S. 2003, 'Refined sugar intake in Australian children', *Public Health Nutrition*, vol. 6, no. 8, pp. 809–13
- Steele, J. 1999, 'Teenage sexuality and media practice: factoring in the influences of family, friends, and school', *The Journal of Sex Research*, vol. 36, pp. 331–41
- Steele, J. & Brown, J.D. 1995, 'Adolescent room culture: studying media in the context of everyday life', *Journal of Youth & Adolescence*, vol. 24, no. 5, pp. 551–76
- Stein, L. & Sinha, N. 2006, 'New global media and the role of the state', in L. Lievrouw & S. Livingstone (eds), *The handbook of new media: social shaping and social consequences of ICTs*, 2nd edn, Sage, London, pp. 415–42
- Steinkuehler, C. 2004, 'Learning in massively multiplayer online games', paper presented to 6th International Conference on Learning Sciences, Santa Monica, CA
- 2005, 'Cognition and literacy in massively multiplayer online games', in *Handbook of research on new literacies*, Lawrence Erlbaum, Mahwah NJ
- Steinmetz, K. & Potter, J. 1996, 'Vegetables, fruit, and cancer prevention: a review', *Journal of the American Dietetic Association*, vol. 96, no. 10, pp. 1,027–39

- Stern, S. & Mastro, D. 2004, 'Gender portrayals across the life span: a content analytic look at broadcast commercials', *Mass Communication & Society*, vol. 7, no. 2, pp. 215–36
- Stratton, M., Conn, L. & Smallacombe, T. 2005, *The young and the restless: the effects of recreational choices and demographic factors on children's participation in sport*, Australian Bureau of Statistics
- Subrahmanyam, K., Greenfield, P.M. & Tynes, B. 2004, 'Constructing sexuality and identity in an online teen chat room', *Journal of Applied Developmental Psychology*, vol. 25, pp. 651–66
- Subrahmanyam, K., Smahel, D. & Greenfield, P. 2006, 'Connecting developmental constructions to the internet: identity presentation and sexual exploration in online teen chat rooms', *Developmental Psychology*, vol. 42, no. 3, pp. 395–406
- Subramani, M. & Rajagopalan, B. 2003, 'Knowledge-sharing and influence in online social networks via viral marketing', *Communications of the ACM*, vol. 46, no. 12, pp. 300–7
- Suzuki, L. & Calzo, J. 2004, 'The search for peer advice in cyberspace: an examination of online teen health bulletin boards', *Journal of Applied Developmental Psychology*, pp. 685–98
- Tamborini, R., Mastro, D., Chory-Assad, R. & Huang, R. 2000, 'The color of crime and the court: a content analysis of minority representation on television', *Journalism and Mass Communication Quarterly*, vol. 77, no. 3, pp. 639–53
- Taveras, E., Rifas-Shiman, S., Field, A., Frazier, A., Colditz, G. & Gillman, M. 2004, 'The influence of wanting to look like media figures on adolescent physical activity', *Journal of Adolescent Health*, vol. 35, no. 1, pp. 41–50
- Taylor, T. 2006, *Play between worlds: exploring online game culture*, MIT Press, Cambridge, MA
- textually.org 2004, *SMS bullies face school suspension*, viewed 12 May 2007, <www.textually.org/textually/archives/2004/12/006271.htm>
- Thomas, A. 2000, 'Textual constructions of children's online identity', *CyberPsychology & Behavior*, vol. 3, no. 4, pp. 665–72
- 2004, 'Children online: learning in a virtual community of practice', *e-Learning*, vol. 2, no. 1, pp. 27–38
- 2006, 'Fictional blogs', in A. Bruns & J. Jacobs (eds), *Uses of blogs*, Peter Lang, New York, pp. 199–210
- Thomas, M. & Drabman, R. 1975, 'Toleration of real life aggression as a function of exposure to televised violence and age of subject', *Merrill-Palmer Quarterly*, vol. 21, pp. 227–32
- Thomas, M., Horton, R., Lippincott, E. & Drabman, R. 1977, 'Desensitization to portrayals of real-life aggression as a function of exposure to television violence', *Journal of Personality and Social Psychology*, vol. 35, no. 6, pp. 450–8
- Thompson, K. & Yokota, F. 2001, 'Depiction of alcohol, tobacco, and other substances in G-rated animated feature films', *Pediatrics*, vol. 107, no. 6, pp. 1,369–74
- Thompson, S. 2003, 'Adolescents as consumers of restricted media content: empowering adults as mediators', *International Journal of Consumer Studies*, vol. 27, no. 3, pp. 243–4

- Thompson, S. & Skrypnek, B. 2005, *Adolescents and restricted media study: selected preliminary findings and their implications for film classification*, viewed 21 March 2007, <www.classification.gov.au/resource.html?resource=238&filename=238.pdf>.
- Thornburgh, D. & Lin, H. 2002, *Youth, pornography and the internet*, National Academic Press, Washington, DC
- Thurlow, C., Lengel, L. & Tomic, A. 2004, *Computer mediated communication: social interaction and the internet*, Sage, London
- Thwaites, T., Davis, L. & Mules, W. 1994, *Tools for cultural studies: an introduction*, Macmillan Education, South Melbourne, Vic
- Tiggemann, M. 2003, 'Media exposure, body dissatisfaction and disordered eating: television and magazines are not the same!', *European Eating Disorders Review*, vol. 11, no. 5, pp. 418–30
- 2005, 'Television and adolescent body image: the role of program content and viewing motivation', *Journal of Social & Clinical Psychology*, vol. 24, no. 3, pp. 361–81
- Tolman, D. 1994, 'Doing desire: adolescent girls struggle with/for sexuality', *Gender and Society*, vol. 8, no. 3, pp. 324–42
- Traudt, P. 2005, *Media, audiences, effects: an introduction to the study of media content and audience analysis*, Pearson, Boston
- Treise, D. & Gotthoffer, A. 2002, 'Stuff you couldn't ask your parents: teens talking about using magazines for sex information', in J.D. Brown, J. Steele & K. Walsh-Childers (eds), *Sexual teens, sexual media: investigating media's influence on adolescent sexuality*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 173–90
- Turkle, S. 1995, *Life on the screen: identity in the age of the internet*, Simon & Schuster, New York
- Turnbull, S. 2003, 'Teaching Buffy: the curriculum and the text in media studies', *Continuum: Journal of Media & Cultural Studies*, vol. 17, no. 1, pp. 19–31
- Turow, J. 2003, 'Family boundaries, commercialism, and the internet: a framework for research', in J. Turow & A. Kavanaugh (eds), *The wired homestead*, The MIT Press, Cambridge, MA, pp. 25–43
- Tyden, T. & Rogala, C. 2004, 'Sexual behaviour among young men in Sweden and the impact of pornography', *International Journal of STD and AIDS*, vol. 15, no. 9, pp. 590–3
- Unsworth, L. 2001, *Teaching multiliteracies across the curriculum: changing contexts of text and image in classroom practice*, Open University Press, Buckingham
- 2006, *e-literature for children: enhancing digital literacy learning*, Routledge, London
- Valkenburg, P. 2004, *Children's responses to the screen: a media psychological approach*, Lawrence Erlbaum Associates, Mahwah, NJ
- Valkenburg, P., Cantor, J. & Peeters, A. 2000, 'Fright reactions to television: a child survey', *Communication Research*, vol. 27, no. 1, pp. 82–99
- Valkenburg, P. & Vroone, M. 2004, 'Developmental changes in infants' and toddlers' attention to television entertainment', *Communication Research*, vol. 31, no. 3, pp. 288–311

- Van den Bulck, J. 2004, 'Television viewing, computer game playing, and internet use and self-reported time to bed and time out of bed in secondary-school children', *Sleep*, vol. 27, no. 1, pp. 101–4
- Van den Bulck, J. & Van den Bergh, B. 2000a, 'The influence of perceived parental guidance patterns on children's media use: gender differences and media displacement', *Journal of Broadcasting & Electronic Media*, vol. 44, no. 3, pp. 329–48
- 2000b, 'Parental guidance patterns on children's media use and conflict in the family', in J. Van den Bulck & B. Van den Bergh (eds), *Children and media: interdisciplinary approaches*, Garant, Leuven-Apeldoorn, pp. 131–50
- Van Der Voort, T. 2001, 'Television's impact on children's leisure-time reading and reading skills', in L. Verhoeven & C. Snow (eds), *Literacy and motivation: reading engagement in individuals and groups*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 95–119
- Van Evra, J. 2004, *Television and child development*, 3rd edn, Lawrence Erlbaum Associates, Mahwah, NJ
- Van Matre, J., Valentine, J. & Cooper, H. 2000, 'Effect of students after-school activities on teachers academic expectancies', *Contemporary Educational Psychology*, vol. 25, pp. 167–83
- Vandewater, E., Bickham, D., Lee, J., Cummings, H., Wartella, E. & Rideout, V. 2005, 'When the television is always on: heavy television exposure and young children's development', *American Behavioral Scientist*, vol. 48, no. 5, pp. 562–77
- Varney, A. n.d., 'When gamers breed', *The Escapist*, viewed 12 December 2006, <www.escapistmagazine.com/print/20/3>
- Vaughan, K. & Fouts, G. 2003, 'Changes in television and magazine exposure and eating disorder symptomatology', *Sex Roles*, vol. 49, no. 7–8, pp. 313–20
- Vavrus, M. 2002, 'Domesticating patriarchy: hegemonic masculinity and television's "Mr. Mom"', *Critical Studies in Media Communication*, vol. 19, no. 3, pp. 352–75
- Vergeer, M., Lubbers, M. & Scheepers, P. 2000, 'Exposure to newspapers and attitudes to ethnic minorities: a longitudinal analysis', *Howard Journal of Communications*, vol. 11, no. 2, pp. 261–93
- Vickberg, S., Kohn, J., Franco, L. & Criniti, S. 2003, 'What teens want to know: sexual health questions submitted to a teen web site', *American Journal of Health Education*, vol. 34, pp. 258–64
- 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*, vol. 40, no. 4, pp. 392–401
- von Feilitzen, C. (ed.) 2004, *Young people, soap operas and reality TV*, Yearbook, Nordicom, Göteborg, SW
- von Feilitzen, C. & Carlsson, U. (eds) 2000, *Children in the new media landscape: games, pornography, perceptions* Nordicom, Göteborg, SW
- Vygotsky, L. 1978, *Mind and society: the development of higher mental processes*, Harvard University Press, Cambridge, MA

- Wake, M., Hesketh, K. & Waters, E. 2003, 'Television, computer use and body mass index in Australian primary school children', *Journal of Paediatric Child Health*, vol. 39, no. 2, pp. 130–4
- Walkerdine, V. 1999, 'Violent boys and precocious girls: regulating childhood at the end of the millennium', *Contemporary Issues in Early Childhood*, vol. 1, no. 1, pp. 3–23
- Wallace, P. 1999, *The psychology of the internet*, Cambridge University Press, Cambridge
- Walsh, G., Mitchell, V., Frenzel, T. & Wiedmann, K. 2003, 'Internet-induced changes in consumer music procurement behavior: a German perspective', *Marketing Intelligence and Planning*, vol. 21, no. 4/5, pp. 305–18
- Walsh-Childers, K., Gotthoffer, A. & Ringer Lepre, C. 2002, 'From "just the facts" to "downright salacious": teens' and women's magazine coverage of sex and sexual health', in J.D. Brown, J. Steele & K. Walsh-Childers (eds), *Sexual teens, sexual media: investigating media's influence on adolescent sexuality*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 153–72
- Wartella, E. 1979a, *Children and television: the development of the child's understanding of the medium*, US Dept. of Health, Education & Welfare, National Institute of Education, Educational Resources Information Center
- (ed.) 1979b, *Children communicating: media and the development of thought, speech, understanding*, Sage, Beverly Hills, CA
- Wartella, E. & Jennings, N. 2000, 'Children and computers: new technology—old concerns', *The Future of Children*, vol. 10, no. 2, pp. 31–43
- Wartella, E., Vandewater, E. & Rideout, V. 2005, 'Electronic media use in the lives of infants, toddlers and preschoolers', *American Behavioral Scientist*, vol. 48, no. 5, pp. 501–4
- Wastrom, M. 2000, "'You know, who's the thinnest?": combating surveillance and creating safety in coping with eating disorders online', *CyberPsychology and Behaviour*, vol. 3, pp. 31–5
- Wellings, F., Nanchahal, K. & Macdowall, W. 2001, 'Sexual behaviour in Britain: early heterosexual experience', *Lancet*, vol. 358, pp. 1,843–50
- Whitlock, J., Powers, J. & Eckenrode, J. 2006, 'The virtual cutting edge: the internet and adolescent self-injury', *Developmental Psychology*, vol. 42, no. 3, pp. 407–17
- Widyanto, L. & Griffiths, M. 2006, "'Internet addiction": a critical review', *International Journal of Mental Health and Addiction*, vol. 4, no. 1, pp. 31–51
- Willett, R. 2005, 'Constructing the digital tween: market forces, adult concerns and girls interests', in C. Mitchell & J. Reid Walsh (eds), *Seven going on seventeen: tween culture in girlhood studies*, Peter Lang Publishers, Oxford, pp. 278–93
- Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N. & Nickell, E. 2006, 'From tree house to barracks: the social life of guilds in World of Warcraft', *Games and Culture*, vol. 1, no. 4, pp. 338–61
- Williams, D. & Skoric, M. 2005, 'Internet fantasy violence: a test of aggression in an online game', *Communication Monographs*, vol. 72, no. 2, pp. 217–33
- Wilson, J., Peebles, R., Hardy, K. & Litt, I. 2006, 'Surfing for thinness: a pilot study of pro-eating disorder web site usage in adolescents with eating disorders', *Pediatrics*, vol. 118, no. 6, pp. e1635–43

- Wilson, N., Quigley, R. & Mansoor, O. 1999, 'Food ads on TV: a health hazard for children?', *Australian & New Zealand Journal of Public Health*, vol. 23, no. 6, pp. 647–50
- Windshuttle, K. 2006, 'The whitewashing of aboriginal manhood', *The Australian*, 23 May 2006
- Wolak, J., Finkelhor, D. & Mitchell, K. 2004, 'Internet-initiated sex crimes against minors: implications for prevention based on findings from a national study', *Journal of Adolescent Health*, vol. 35, no. 5, p. 424.e11
- Wolf, M. & Perron, B. 2003, 'Introduction', in M. Wolf & B. Perron (eds), *The video game theory reader*, Routledge, New York, pp. 1–24
- Wood, R., Griffiths, M. & Eatough, V. 2004, 'Online data collection from video game players: methodological issues', *CyberPsychology & Behavior*, vol. 7, no. 5, pp. 511–8
- Wood, R., Griffiths, M. & Parke, A. 2007, 'Experiences of time loss among videogame players: an empirical study', *CyberPsychology & Behavior*, vol. 10, no. 1, pp. 38–44
- Ybarra, M. & Mitchell, K. 2004, 'Youth engaging in online harassment: associations with caregiver-child relationships, internet use and personal characteristics', *Journal of Adolescence*, vol. 27, pp. 319–36
- Young, K. 1999, 'Internet addiction: symptoms, evaluation and treatment', in L. Van de Creek & T. Jackson (eds), *Innovations in clinical practice: a source book*, Professional Research Press, Sarasota, FL, vol. 17, pp. 19–31
- Young, K. & Rodgers, R. 1998, 'The relationship between depression and internet addiction', *CyberPsychology & Behavior*, vol. 1, no. 1, pp. 25–8
- Young, S. 2001, 'What's the big idea?: production, consumption and internet regulatory discourse', *Media International Australia incorporating Culture and Policy*, vol. 101, pp. 9–18
- Youniss, J., Bales, S., Christmas-Best, V., Diversi, M., McLaughlin, M. & Silbereisen, R. 2002, 'Youth civic engagement in the twenty-first century', *Journal of Research on Adolescence*, vol. 12, no. 1, pp. 121–48
- Zanker, R. 1999, 'Capturing kids: pester power in Pink November', *Southern Review*, vol. 33, no. 3, pp. 324–35
- Zill, N. 2000, 'Does Sesame Street enhance school readiness?: evidence from a national survey of children', in S. Fisch & R. Truglio (eds), *"G" is for growing; thirty years of research on children and Sesame Street*, Lawrence Erlbaum, Mahwah, NJ, pp. 115–30
- Zillmann, D. 2000, 'Influence of access to unrestrained use of erotica on adolescents' and young adults' dispositions towards sexuality', *Journal of Adolescent Health*, vol. 27, no. 2, pp. 41–4
- Zuppa, J., Morton, H. & Mehta, K. 2003, 'Television food advertising: counterproductive to children's health?: a content analysis using the Australian Guide to Healthy Eating', *Nutrition Diet*, vol. 60, pp. 78–84