Young Children and the Media

A Discussion Paper

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for the Australian Research Alliance for Children and Youth May 2010
The Australian Research Alliance for Children and Youth (ARACY)

The Australian Research Alliance for Children and Youth (ARACY) is a national non-profit organisation working to create better futures for all Australia’s children and young people. Despite Australia being a wealthy, developed country, many aspects of health and wellbeing of our young people have been declining. ARACY was formed to reverse these trends by preventing and addressing major problems affecting our children and young people.

ARACY tackles these complex problems through building collaborations with policy makers, practitioners working in the field and researchers from a broad range of disciplines. We share knowledge and foster evidence-based solutions.

About the authors

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Acknowledgement

Roy Morgan Research has provided access to data from its Young Australians Survey (YAS) in support of ARACY’s Young Children and the Media project. ARACY gratefully acknowledges the assistance of Roy Morgan Research in providing this data.
The ‘Young Children and the Media’ project

ARACY’s Young Children and the Media project is one of a number of collaborative projects aimed at responding more effectively to complex problems affecting the wellbeing of young Australians.

The focus of this project is to identify and act on media strategies to enhance the wellbeing of children in their early years (2–8), including how media are used, media and digital literacy, and how to facilitate the creation of content suitable for children.

This project examines the positive and negative impact of media use on the wellbeing of children in this age range.

Through this project ARACY will identify:

- what the evidence tells us about the impact of media on the wellbeing of children
- the gap between evidence and practice, and
- strategies that can be successfully implemented to bridge these gaps.

Further information on the Young Children and the Media Project is available on the ARACY website

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Summary

• This discussion paper provides a brief summary of the available Australian and international research literature concerning media use and the wellbeing of young children aged between 0 and 8 years.

• The influence of media is likely to be greatest and most enduring on children aged 0 to 8 years yet it has been less studied in this age group, especially in Australia, than in children of older age groups.

• Despite the development and uptake of new media, the dominant media viewed by children are free to air television and DVDs.

• Watching television appears to have no clear educational advantage for children under 2 years old and is inferior to face-to-face interaction for language acquisition.

• Children’s time spent with new, digital media does not replace time spent reading.

• Children of highly educated parents watch less television, devote more time to print media and do better at school.

• It seems likely, especially for children over 2 years of age, that the content of the media programs being watched is more critical than the act of watching itself.

• Age-appropriate television programs of educational value are widely considered beneficial to the development and wellbeing of children from the age of three.

• Repetition of preschooler programs in a broadcaster’s schedule may aid comprehension of educational content by the target audience.

• Young children are able to interact with what they see on the screen (applaud, imitate behaviours, etc) and alternate attention between the screen and the surrounding environment. Screen media viewing can be associated with pretend and outdoor play.

• Research suggests that television can frighten some young children and disturb their sleeping patterns and that exposure to violent content can lead to inappropriate thoughts and behaviour.

• Parental monitoring has an influence on children’s media use and its outcomes.
Research suggests that the most effective parental practices are co-viewing programs with children and active mediation (engaging the child in communication about what is being viewed), while the popular practice of restrictive mediation (setting rules or regulations about TV viewing) is less effective.
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Introduction

In the 21st century, electronic media are universally present in the lives of even very young children, and children are regular and often active users of that media (Thorn 2008; Addlington 2010). We know that media use in the early years of a child’s development is critical, in that media patterns established in this period have long-term implications for cognitive development and future media use (Huston et al. 1990; Lemish 2008; Anderson et al. 2001). This makes the focus on the patterns of media use and the content of media consumed in the early years of childhood all the more important.

This discussion paper provides a brief summary of the available Australian and international research literature concerning media use and the wellbeing of young children aged between 0 and 8 years. The paper aims to investigate this literature in terms of both positive and negative impacts associated with media use by children in this age range. Our review emphasises the findings of nationally representative studies.

While we cite Australian research where available, many of the findings come from US research because more nationally representative studies have been funded there, and there has been a special interest in minority groups. Australian and European research has often been restricted to smaller samples, and has often privileged qualitative research over large scale quantitative surveys. While qualitative studies often describe and explain conditions of media use much better than surveys, they are not representative, and therefore are of less use in generalising about what type of interventions might positively influence outcomes for children in such areas as education, health, social adjustment, etc.

This paper concentrates on children who are at the first two levels of cognitive development as defined by the Swiss psychologist Jean Piaget (1969). According to Piaget, from birth to 2 years of age (the sensory–motor level) an infant child experiences the world through senses and actions and perceives events exclusively from his or her own point of view. Between approximately 2 and 7 years of age (the pre-operatory level) children develop the language skills that allow them to engage in more complex thought processes, although still limited to relatively basic thought patterns and connections.
Lemish (2008) notes that the vulnerability of very young children in this vital period of physical and social development contributes to a heightened sense of ‘moral panic’ about the intrusion of new and complex forms of electronic media. Anxieties about social change have always accompanied the introduction of new media into society, making it especially necessary for investigators to use the best available evidence.
Types of media

Two successive Kaiser Foundation reports on American children aged 0 to 6 years established that more than 80% use some form of screen media in any given day, while similar numbers are involved in reading and listening to music (Rideout, Vandewater and Wartella 2003; Rideout and Hamel 2006). Some 43% of US children aged 4 to 6 years are regular computer users (Rideout and Hamel 2006). The Longitudinal Study of Australian Children (LSAC), a nationally representative survey, reports that 40% of 3 to 4-year-old children participate in computer or Internet activity daily, rising to more than 80% for 7 to 8 year olds (ACMA 2009).

Of all media forms, television remains the most influential in the lives of both children and adults. The Australian Communications and Media Authority (ACMA) 2009 report Use of Electronic Media and Communications: Early Childhood to Teenage Years found that television (94%) and DVD/video (91%) are the most commonly used media among 3 and 4-year-old Australian children, with computer and Internet usage less common (40%) and electronic games the least used (16%). Our own analysis of data from Wave 2.5 of LSAC, conducted in 2007, shows that roughly 1 in 8 children aged 3 to 4 years and 1 in 6 children aged 6 to 7 years have a television set in their own bedroom. In contrast, recent US research finds that 1 in 3 children under 6 years of age have a television set in their own bedroom, with electronic media consumption actually peaking in this preschool period, before dropping off in the first years of school and rising again at around 8 years (Roberts and Foehr 2008). Australian research sourced from the LSAC found that 4-year-old children watched an average of 2.3 hours television on weekdays and 2.2 hours on weekend days. The study children spent most of their playtime watching television/videos/DVDs, but the amount was influenced by socio-demographic variables. Higher maternal education was associated with less television viewing (ACMA 2009; Baxter and Hayes 2007). A recent Australian study surveyed mothers of 92 children aged from 3 to 5 years (mostly from middle socioeconomic backgrounds). It found that the study children on average watched around 1 hour of television and 30 minutes of videos/DVDs on weekdays, and spent an additional 30 minutes watching videos/DVDs on weekends (Skouteris and McHardy 2009).
Time spent watching television versus reading

A significant amount of research has suggested a link between the way children spend their time in early childhood and developmental outcomes (Crourter and McHale 2005; Huston and Wright 1999). This period, it is suggested, is particularly crucial because social and intellectual development is more malleable than in later years, as younger children have less control over their time use than do older children, and there may be more family and individual variability in how children spend their time in their preschool years than once they begin to attend school (Huston and Wright 1999).

Clear links have been found between the amount of time children spend reading and academic achievement (Hofferth and Sandberg 2001; Timmer et al. 1985). Some studies (discussed further below) find that more television viewing is associated with lower academic achievement scores, although there are age and gender variables that affect outcomes. The most consistent finding in the literature is the impact of parents' educational level. Children of parents with higher levels of education spend less time watching television and more time reading (Brown et al., 2008; Bianchi and Robinson 1997; Huston and Wright 1999; Hofferth and Sandberg 2001; Timmer et al. 1985).

Equity variables, family characteristics and children’s outcomes

Equity variables, such as level of parental education, maternal employment, number of siblings in the home, and mother’s participation in sport have been shown to influence children’s activities that may impact on later outcomes. Confirming previous Australian and US findings (Brown et al. 2008; Bianchi and Robinson 1997; Hofferth and Sandberg 2001; Baxter and Hayes 2007), Skouteris and McHardy’s study (2009) indicates that mothers’ level of education, participation in sport, and time spent watching television and reading are significant factors in their children’s level and type of media use. Children of more highly-educated mothers watched less television and read more.
US research has targeted disadvantaged groups more frequently than Australian studies. While much of this has discussed children’s use of time as it relates to the acquisition of ‘social capital’ (Bianchi and Robinson 1997), media use and parental mediation of media use is not always central to the study. Poorer economic circumstances and parents’ employment status can affect the time that parents have to interact with, listen to, read to, teach and comment on media content that children access. College-educated mothers of preschool children have been found to devote more time to childcare and interaction with children (teaching, taking on educational outings, playing) than less-educated mothers. In contrast to popular fears about working mothers and ‘latchkey children’, maternal employment did not seem to predict more television watching for young children, or less time spent directly interacting with children. However, single-parent families are associated with less favourable outcomes for children, even when controlling for socioeconomic differences. Maintaining a single-parent family reduces the time that parents are able to spend monitoring children’s activities including media-related activities (cited in Bianchi and Robinson 1997).

**Television versus other screen media**

Recent reports on the use of electronic media and communications by Australian children and teenagers (ACMA 2009; ACMA 2007) found television to be unique among the various media types, as use levels remain constant from early childhood right through to later teenage years. In light of such findings, it is not surprising that television has been by far the most discussed media form in the wider research literature. Research into more recent developments in electronic media content and usage is still in the rudimentary stage (Brooks-Gunn and Donahue 2008), particularly for children under 8 years of age. For all of these reasons, this review concentrates mostly on television, and only briefly on print and the other less-used media.

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1 “Social capital” is a concept used in various health, economic and social sciences to refer to connections within social networks that affect the value that individuals are perceived to have. It assumes that social networks provide resources and support to aid the productivity and wellbeing of individuals, and affects how individuals are esteemed within groups, such as peer groups of children. Social capital has been the focus of research by the ABS in Australia, on the assumption that there are links between the ‘social, economic and health-related outcomes for individuals and to the strength and sustainability of communities’ (ABS 2006, reissue).
One of the few in-depth investigations of computer use by toddlers and preschool children suggests that use increases proportionately with age, with parentally-mediated usage waning and autonomous usage commencing at around 3-and-a-half years (Calvert et al. 2005). This US-based study found that most computer usage in this age bracket is associated with game play. A correlation between non-game computer usage and enhanced reading skills was suggested, however the authors point out that further research is required in this area.

Using traditional media such as books also remains prevalent (Rideout, Vandewater and Wartella 2003; Rideout and Hamel 2006). There is evidence to suggest that newer forms of digital media are not replacing older forms, but rather are being used in tandem with them (Roberts and Foehr 2008). In some instances, electronic media use is actually shown to encourage book reading (Kirkorian et al. 2008). However, a comprehensive survey by the National Literacy Trust in the UK showed that primary school children are more likely to read books than secondary school children and suggested that the attraction of digital media may be one reason for the decline in reading among older children (Clark and Foster 2005).
The impact of television

A number of studies have found that watching television has no benefit for children under 2 years of age.

Anderson and Pempek (2005) summarised the few studies on the ability of infants under 2 years of age to cognitively process television programs developed specifically for infant viewers and found that there is likely no positive value in viewing television for children under two years of age. Kirkorian et al. (2008) further point out that the available evidence suggests children under the age of 2 years are not self-directed users of the media; however, the authors also note the paucity of research with respect to very young children and their comprehension of screen media, arguing that more studies are required. A study by Krcmar and others (2007) also supports the belief that children under 2 years of age do not benefit from watching television, as prelinguistic or newly verbal infants are more likely to learn new words from their adult caregivers than from television. Similar results were obtained in a British study involving 15-month-old infants, who demonstrated a higher ability to repeat learned tasks after a live demonstration rather than a televised one (Zack et al. 2009).

Most research with preschool-aged children has focused on the perceived negative impact of television viewing. There is, for example, evidence that watching violent television programs by very young children (particularly males) is correlated with subsequent aggressive behaviour (Bandura et al. 1963; Bjorkqvist 1985; Christakis and Zimmerman 2007). Most behavioural psychological researchers agree that viewing violence on television has the potential to affect an individual child’s behaviour, psychological wellbeing and beliefs about the world. Nonetheless, others have argued that mediating factors—which may include the context in which the violence is portrayed, the predisposition to aggression in the individual child, and gender and socioeconomic status—must be taken into consideration (Buckingham 1996).

Preschool-aged children may also be frightened by screen images with fantasy or supernatural elements, as well as by animals or characters depicted as dangerous or monstrous. Only when they have reached Piaget’s concrete operational stage (aged 7 to 11 years) are children able to make ‘modality judgements’ and distinguish between fantasy and reality (Cantor 2001). Paavonen et al. (2006) claim that younger children especially 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 that their parents might not predict. Nonetheless, research has found that extreme cases of intense fear from media images are not the norm. Most fright responses are of a milder kind and can be safely dealt with by parental strategies such as offering a warm drink or a blanket for preschool children, or discussing the fictional/unreal aspects of programs (cognitive strategies) with school age children (Cantor 2001).

Owens et al. (1999) found that television viewing was associated with sleeping difficulties, bedtime resistance, sleep-onset delay, sleep anxiety, night waking and shortened sleep duration in children aged 4 to 10 years. In a study specific to television viewing and sleep patterns in children aged 5 to 6 years, Paavonen et al. (2006) showed that 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.

In 2001, the American Academy of Pediatrics Committee on Public Education recommended a number of parental guidelines for television usage, including the removal of television sets from all children’s bedrooms and discouraging all viewing for children less than 2 years of age. As noted previously, a comprehensive follow-up study of more than 1000 US children aged 0 to 6 years found that those guidelines were not being followed: 1 in 5 children aged 0 to 2 years, and more than one-third of children aged 3 to 6 years, were found to have television sets in their bedrooms, while more than 60% of 0 to 2-year-olds watch television on a ‘typical day’ (Vandewater et al. 2007). Australian research shows lower levels of media equipment in Australian children’s bedrooms, though the percentages are not negligible. Wave 2.5 of LSAC found that 13% of children aged 3 to 4 years had a television in their bedroom (n=3062), rising to 20% for 7 to 8 year olds (n=3123) (ACMA 2009). The LSAC shows that most Australian children below the age of 2 years watch television for an average of 36 minutes per day (Australian Institute of Family Studies 2005). Conversely, the findings of a smaller study conducted in Australia revealed that a high percentage of preschool-aged children (about 70%) were following the American Academy of Pediatrics guideline recommending less than 2 hours of electronic media use each day (Okely et al. 2009).

It is also necessary to consider the impact of background television on very young children. As Rideout and Hamel (2006) point out, having a television playing in the background may indirectly cause problems such as interrupting the concentration of a child trying to focus on other tasks or stimuli, or inadvertently exposing the child to age-inappropriate material. Finally, Guernsey (2007) makes the important point that the American Academy of Pediatrics, in its recommendation of zero screen time for children under two years of age, is
Research critical of the negative effects television has on preschool-aged viewers can be balanced by studies that suggest that young children are able to interact with what they see on the screen (applaud, imitate behaviours, etc), and to actively alternate attention between the screen and the surrounding environment (Huston et al. 2007; Lemish 2008; Valkenburg and Vroone 2004). It seems likely, especially for children over 2 years of age, that the content of the program being watched is more critical than the act of watching itself. For example, Linebarger and Walker (2005) analysed television viewing information for 51 infants and toddlers. In this study, program content was found to correlate to media effects: the best programs were found to have age-specific embedded linguistic strategies and to promote active participation by the child. Rideout and Hamel (2006) point out that another positive impact of television viewing may be the opportunity it affords for parent–child bonding. Skouteris and McHardy’s Australian study (2009) indicates that child informative programs are positively associated with both pretend play and outdoor play.
Television: entertainment or education?

In assessing the field of television programming specific to toddlers, preschool and early primary school children, it is important to first point out the enduring distinction between commercial and public television. This has traditionally been couched as a market-driven private media versus an educative public media (Melody 1973; Ang 1991), although such a distinction has become blurred in more recent years and with the advent of subscription television. Despite the advent of new screen media, young children in Australia are now viewing more public or free-to-air television than ever before (ACMA 2007).

The field of cognitive developmental psychology has produced the most evidence to suggest that there are educational benefits to young person’s television viewing in the home. The most studied group of children are those in the pre-operational stage of development, the target audience for educational programs such as Sesame Street and Play School. There is evidence that these children are cognitively active, goal-directed viewers who use the formal features of television to guide them towards content that suits their current developmental needs (Bickham et al. 2001; Huston et al. 2000; Huston et al. 2007). These US studies found benefits to children of this age group, in terms of later school achievement, from viewing programs made with their developmental needs in mind. It should be noted that in most US research school readiness, particularly among disadvantaged ‘minorities’, is defined as a key developmental need.

An important earlier longitudinal study concerning very young children and their ability to learn vocabulary from television found an apparent causal connection between 3-year-old children’s viewing of an educational program (Sesame Street) and their improved scores on vocabulary tests (Huston et al. 2000; Anderson et al. 2001). The Centre for Research on the Influences of Television on Children conducted an initial survey on the effects of educational television viewing in children aged 2 to 5 years and 4 to 7 years (the Early Window Project), followed by a further survey of participants when they were in their teenage years (the Recontact Project) (Bickham et al. 2001; Huston et al. 2000). Significant consumption of educational television programming was found to result in enhanced achievement in reading and mathematics. The Recontact Project also found that the viewing of educational programs at younger ages (2 to 3 years) had a greater impact than viewing from 4 years of age onwards, suggesting that there is a window of opportunity for very young
children in which watching educational television can have its longest and most powerful effects.

In a 2007 review of 50 years of US research on television, cognitive development and educational achievement, the authors concluded that educational television has a substantial positive influence on children’s educational achievement (Schmidt and Anderson 2007). Conversely, they also found that entertainment television viewing has a negative impact upon educational achievement. The review did find some evidence that television viewing in the early school years may negatively affect reading acquisition, although from the third grade onwards television viewing is unrelated to reading achievement (Schmidt and Anderson 2007).

Zimmerman and Christakis (2007) state that while the association between early television viewing and attention problems is specific to the consumption of entertainment programming before the age of 3 years, viewing of any content subsequent to this age is not associated with attentional deficit. Nonetheless, the balance of opinion is now weighted toward the idea that—at least for children over 2 years of age—content is more important than the media being used or the time spent using it (Brooks-Gunn and Donahue 2008). Age-appropriate television programs of educational value are widely considered beneficial to the development and wellbeing of even very young children (Huston et al. 2007). However, the question of whether the time a child spends with a book is more influential than the same time spent with educational electronic media has yet to be established by research.

Content issues: Program design and children’s comprehension

As touched on above, the content of television watched by children is considered more important than simply the amount of time they spend watching. Child informative, or curriculum-based, content is shown to be associated with better educational outcomes than general entertainment programs (Schmidt and Anderson 2007). Programs must, however, be designed with young children’s cognitive abilities in mind.

Research on children’s comprehension of explicit versus implicit information in television content suggests that preschool-aged children generally lack the processing space and attention skills required to understand implicitly presented material, such as events that are implied but not
directly shown on the screen (Collins et al. 1978, cited in Skouteris et al. 2007). The ability to make complex inferences about a story’s implicit content appears to develop only at around 7 to 8 years of age (Mares 2006; Collins et al. 1981, cited in Skouteris et al. 2007). Researchers focusing on the educational outcomes of Sesame Street have argued that where the educational content of a program is integral to the narrative (story) content, children’s processing and understanding is increased. Understanding of the story enhances comprehension of the educational content (Fisch 2002).

Much research has looked at children’s attention to, and comprehension of, television programs. There are competing theories of attention. Singer (1980) proposes that young children’s attention to television is primarily gained and maintained through formal features that elicit orienting reactions such as movement and scene changes. Advertisements commonly use these attention-gaining devices. However, other researchers argue that young children’s attention to television is primarily driven by their comprehension of the program’s content (Anderson and Lorch 1983). They argue that mere formal features will become less attention-worthy once children become familiar with them, while attention to a program that is challenging but somewhat understandable should increase until that content is optimally understood.

Thus (1) repetition of the same episode of a preschool educational program within a broadcaster’s schedule or (2) repetition of common program elements (eg matching games, pretend play, story time) should promote comprehension of and thus attention to the content. Noble proposed that ‘parasocial interaction’—the guidance of a sympathetic adult host to elicit children’s participation in the educational content—was crucial to content for this age group. Programs designed for a preschool audience are thus commonly designed to elicit overt verbal and behavioural reactions (interactions) from the viewers (Duck and Noble 1979; Crawley et al. 1999).
Screen media, health and obesity

An increasing amount of research is being conducted into links between media use and obesity in very young children (Wake et al. 2006; Wake et al. 2008; Mathers et al. 2009). Analysis of advertising content during children’s television programming, primarily in the US, has consistently shown that the majority of food advertisements aimed at children feature poor quality, ‘junk’ foods (Batada and Wootan 2007; Radnitz et al. 2009; Stitt and Kunkel 2008). More research needs to be done on this in the Australian context where the relationship between advertising regulation and broadcast sectors differs.

A longitudinal study in New Zealand by Hancox and Poulton (2006) supports an association between television viewing and obesity, as measured by increased body mass index (BMI). More than 1000 participants were surveyed every two years from age 3 to 15 years. The study found that the mean hours of watching television in childhood was associated with an increased BMI in later years, particularly in young girls; moreover, the association remained strong even after adjusting for socioeconomic status and parental BMI (Hancox and Poulton 2006).

Borzekowski and Robinson (2001) conducted a controlled study to establish the effect televised food commercials have on the dietary preferences of preschool children aged between 2 and 6 years of age. They found that children who watched videos with embedded food commercials were significantly more likely to choose the advertised food item from a pair of similar products, with only one or two exposures to the advertisement able to influence the children’s short-term preferences. On the basis of their research, Borzekowski and Robinson argued that the exposure of preschool-aged children to television advertisements should be strictly limited. In addition, a very recent study of the effects of different kinds of television content on children’s obesity suggests that the pathway to increased BMI is through exposure to advertising on commercial television rather than decreased physical activity because of the total amount of time spent viewing (Zimmerman and Bell 2010).

Mendoza et al. (2007) established that US preschool children who view electronic media for more than two hours each day are at significantly higher risk of obesity; these findings, they argue, justify intervention studies to limit usage within this specific age range. Similarly, Epstein et al. (2008) found a correlation between the use of screen media and increased BMI in a sample of children aged between 4 and 7 years. More recently, Australian public health researchers used meta-analysis and microsimulation to model the effects of an intervention to
reduce advertisements for EDNP (energy dense, nutritionally poor) foods such as soft drinks and junk foods, during times when children aged 5 to 14 years were a substantial part of the viewing audience (≥ 15%). While this study involved projections and economic modelling, rather than a study of effects over time, the researchers concluded that such an intervention would be one of the most cost-effective public health measures available to governments: their model showed reduction in years of life lost and years lived with disability-attributable health issues caused by poor diet (Magnus et al. 2009).

Recent evidence also suggests that young children are susceptible to online advertising, with a study showing that ‘advergames’ targeted at children combine computer play with foodstuffs, the latter mostly constituting ‘junk food’ products (Lee et al. 2009; see also Kaiser Family Foundation 2006; Mallinckrodt and Mizerski 2007; Livingstone 2006). An analysis by Stratton et al. (2005) of information collected in the 2003 Australian Bureau of Statistics Children’s Participation in Cultural and Leisure Activities survey found that children (aged 5 to 14 years) who use a computer or the Internet at home, as well as those spending some time playing computer games, are more likely to play organised sport outside school. However, children who watched more than 20 hours of television per fortnight were significantly less likely to participate in sport.

One potentially useful insight from the body of research on the effects of advertising on young children’s food consumption is the suggestion that interventions involving the advertising of healthy, nutritional foodstuffs may also affect children’s consumption behaviours, in a positive way (for example, see Byrne and Nitzke 2002).
Young children as consumers

According to Schor (2004), in contemporary society children are immersed in an ever-growing media culture of advertising and branding. Further, this immersion is beginning at an earlier age as companies target even very young children as potential consumers of their products. Schor advocates wide-ranging legislative and cultural changes in order to combat the commercialisation of childhood, including government regulation to respond to corporate strategies for targeting very young children; community dialogue between corporations, parents and children; and strategies for the decommercialisation of both households and public spaces. The fact that children under 8 years of age find it more difficult than their older counterparts to make profound differentiations between programs and advertisements (Jennings and Wartella 2007) means that they are especially vulnerable to corporate marketing practices.

In a review of 25 years of literature on the consumer socialisation of children, John (1999) finds that each stage of a child’s development features specific cognitive and social characteristics and that each of these stages has implications for socialisation into consumer society. According to John, 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 perceptual stage (between the ages of 3 and 7 years) are especially vulnerable and open to persuasion by media marketing and branding. John also summarises how, in the perceptual stage, children take appearance as reality, believe ads are truthful and begin to relate brand names with product categories. Perhaps most crucially, John’s review finds that children in this stage have a limited repertoire of decision-making strategies, and value consumer items only for their ‘surface features’.

Moondoore et al. (2009) tested a theory that young children begin to recognise and differentiate televised advertising material at around 5 years of age. Subjects between the ages of 6 to 12 years were shown printed versions of webpage advertisements. The study found that 6 to 8-year-old children were significantly less likely to identify web-based advertisements, suggesting that their integrated nature makes it harder for young children to differentiate ads from the core program. Chakroff (2007) further confirms that while the cognitive ability of very young children makes it difficult for them to understand the persuasive nature of advertisements, they are nonetheless able to recognise brands and develop materialistic desires for specific advertised products.
Chakroff suggested that more research is needed in order to understand how children under 8 years of age think about advertising messages and how caregivers might be taught how to mediate the influence of those messages.

**Young Australians Survey (YAS)—Roy Morgan Research**

In the year to June 2009 the YAS surveyed 3359 respondents aged between 6 and 13 years. The sample is designed to provide reliable national estimates. The findings presented here are based on survey responses from 1503 children aged 6 to 9 years of age.

The survey contained questions asking who makes purchasing decisions. The graph below maps the percentage of children (6 to 9 years) who reported that they mainly decide, they helped their parents decide or a parent mainly decides. Note: the percentage of children who responded ‘can’t say’ or did not provide an answer is not included in this table.

**Chart 1: Decisions on buying: Children 6 to 9 years, 2009**
It is clear that children have the greatest say in what kind of toys and games are bought for them, and to a lesser extent, videos and DVDs hired or purchased. There is a large class of items where the children feel they exercise what is often called ‘pester power’ to assist their parents in making choices. These co-determined items include products shown in other research to be relevant to weight status, self-esteem and learning. For example, clothes and shoes have both been shown in the qualitative literature to be closely connected with personal identity and acceptance by peers. Breakfast nutrition has been linked with learning while snacks are often categorised as potential ‘junk foods’ that contribute to overweight and obesity. Children’s co-determination also extends to the choice of media content. Parents mostly seem to be in control of lunchtime drinks and snack, dinner foods, the choice of vegetables and the type of ice cream.

Interestingly, the YAS data asks children whether they agree or disagree with the statement ‘I like healthy food’. The proportion of young children who agree with that statement diminishes as average weekly hours spent viewing television rises ie young children who watch less television are more likely to agree that they like healthy food than those with higher average hours of television viewing.

Consistent with the child development literature, children become more critical viewers as they mature, developing a distrust of the claims and appeals made in advertising. More than half (54%) of 6 to 9 year olds agree that ‘some TV advertising is sneaky’ while 67% of 10 to 13-year-old children agree with this statement.

As they mature, young Australians exhibit a greater interest in print media, particularly magazines, greater use of mobile phones and the Internet.

About 7% of 6 to 9 year olds report owning a mobile phone, while about one-quarter report having used a mobile phone in the past four weeks, predominantly for social contact, listening to music, taking pictures and game-playing. Half of the 10 to 13-year-old respondents owned a mobile phone.

A similar pattern of increasing participation and interest applies to accessing content via the Internet. One in six (17%) 6 to 9 year olds accessed the site ninemsn (including Hotmail and Messenger) in the past four weeks compared with 55% of 10 to 13 year olds.
Media content and decision making by young children

Studies of children’s reactions to television content have found that even infants make decisions about program content, attending to material that is of interest to them and turning away from content that is beyond their sphere of interest or understanding (Valkenberg and Vroone 2004).

As already noted, a number of authors have emphasised that the media content consumed by very young children is the crucial factor that should drive research and policy (Brooks-Gunn and Donahue 2008; Skouteris and McHardy 2009). It is therefore important to consider the extent to which children under 8 years of age make decisions about the kind of media content they consume, as well as how such children might be actively involved in the creation of such content. The mass of literature on media use and effects has been challenged to some extent by research and theory, based largely in sociology and cultural studies, which argues that even very young children are both discerning and creative in the ways that they use media content in their day-to-day lives (Buckingham 1996). Yet it must again be emphasised that the research concerning new electronic media and very young children is particularly limited. This review found little research on content creation at home in discretionary time by young children.

In her analysis of social developmental patterns in children’s media use in discretionary time, Sonia Livingstone (2002) describes children aged 6 to 8 years as having an ‘activity focus’, in which 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. Parental mediation is the norm with regard to children’s activities during this period, including use of media.

The computer and the Internet are undoubtedly the media at the forefront of digital literacy and active participation, and there is evidence that even preschool-aged children are becoming regular computer users (Rideout and Hamel 2006; Zevenbergen and Logan 2008). Wave 2.5 of LSAC found that computers were present in more than 71% of households with 3 to 4-year-old children, and more than 90% of homes with 7 to 8 year-olds. The age of the children in the household predicted more computer and Internet access: 65% of households with 3 to 4 year olds and 72% of households with 7 to 8 year olds had Internet access. In addition, 23% of households with 3 to 4-year-old children, and 65% of homes with 7 to 8 year olds had an electronic games system such as Gameboy, Nintendo, PlayStation or X-Box (ACMA 2009).
Simple availability of media devices does not mean that young children are their primary users: older siblings and adults may command greater access. In addition, parents of children aged 3 to 4 years and 7 to 8 years generally feel that their child's media use is easy for them to control. The LSAC findings indicate that 40% of the study children aged 3 to 4 years used a computer at home (average 7 minutes per day), and 16% played electronic games (average 3 minutes per day). Most children aged 7 to 8 years used the Internet at home (84%), primarily for playing games (ACMA 2009).

Some early childhood literacy research has documented use of the Internet, video games and phones (either real or toy) in fantasy play and playground talk. These practices are seen as enhancing young children's formation of social identities and practicing of identities as communicators and digital technology users (Marsh 2005). There is also literature on the use of digital communication and technologies to enrich print-based literacy such as classroom writing in school-aged children (Merchant 2003; Unsworth 2006).

The concept of digital literacy moves the emphasis from simply encountering existing media to focusing on the user as an active creator of media content (Hartley et al. 2008). Multimodal literacy is important to the notion of young children actively engaging in media content creation, as it emphasises children's ability to read, create, design and produce meaning simultaneously across a range of media texts and genres (Callow and Zammit 2002; Kress and van Leeuwen 2001; Mackay 2002; Snyder 1998; Unsworth 2006).²

² Ongoing Australian research on digital media literacy, including content creation can be accessed via the Australian Communications and Media Authority's Digital Media Literacy Research Forum, http://www.acma.gov.au/WEB/STANDARD/pc=PC_311477
Mediation

The impact of familial mediating factors on young children’s media use patterns has been well documented (Calvert 1999; Huston et al. 1990; Nathanson 1999, 2001). Rideout and Hamel (2006) note that parents’ own media presumptions and habits relate closely to the media consumption of their children.

Nathanson (1999) describes three ‘distinct but related’ aspects of parental mediation of children’s television viewing: active mediation, or talking to children about TV; restrictive mediation, or setting rules or regulations about children’s TV viewing; and co-viewing, or simply watching TV with children. In relation to restrictive mediation, ACMA (2009) reports that the vast majority (94%) of parents set rules for the television content that their 3 to 4-year-old children can watch, and that most (64%) set rules for the length of time their child can watch television each day.

Looking specifically at the parental mediation of television viewing by preschool-aged children, Warren (2003) argues that parental mediation of media use must be considered in light of the vast array of mediating activities that comprise the day-to-day interaction between child and parent. The study finds that although co-viewing is likely to be the most useful method of mediating for the cognitive needs of preschool children, most parents use the strategy of restrictive mediation.

Kirkorian et al. (2008) summarise the crucial mediators for effective educational media, arguing that very young children require content that is comprehensible, repetitive and encourages active involvement rather than passive viewing. The authors conclude that parental mediation in the form of co-viewing is most likely to be beneficial.

The US-based evidence in relation to young children and print media points to important correlations between reading and parental mediation (Roberts and Foehr 2004). Evidence shows that there is a relationship between parental education and a child’s exposure to print media, and also that as the availability of television in a household increases, the availability of print media decreases. Overall, preschoolers whose parents read to them have increased vocabulary and better narrative skills (Thorn 2008).

In a study involving participants between 5 and 7 years of age and their parents, Chakroff (2007) shows that active mediation strategies by caregivers work better than restrictive mediation strategies. For example, in relation to
advertising, children are likely to remember and respond to parental mediation that targets the desirability of the specific product advertised rather than mediation that emphasises that advertisements are not realistic portrayals of the world.

Overall, the evidence points to the need for parents and caregivers to focus on active mediation.


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