The development of children's understanding of advertisements on television and the Internet in the UK and in Indonesia

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Abstract

Children's ability to understand the purpose of television advertising develops in stages; the ability to recognize advertisements from surrounding programmes and the ability to understand the informative and persuasive intent of advertisements. Researchers have demonstrated that children are able to distinguish television advertisements from surrounding programmes as young as 4 years of age. Most research into children's understanding advertisement intent has been based on verbal methods and this research has concluded that children have an awareness of persuasive intent of advertisements from the age of 7 or 8 years. In contrast, researchers who have used non-verbal methods to measure children's understanding of advertising claim that children as young as 4 or 5 years of age have some awareness of the informative and persuasive intent of advertisements.

In chapters 3 to 7 we investigated UK and Indonesian children between the 4 and 9 years of age using non-verbal methods. The results failed to show that young children can demonstrate an awareness of the informative or persuasive intent of advertisements. Instead our results support the findings from verbal methods, that children only develop an understanding of the purpose of advertising about 7 or 8 years of age.

Although research on children's ability to distinguish between advertisements and programmes is well established for television advertising, there has been lack of research in new media. In chapters 8 to 10 we investigated UK and Indonesian children's ability to identify advertisements on Web pages. The results showed that children were poor at recognizing advertisements on the Web pages. Less than a third of 6-year-olds could identify the advertisements, although this age group can successfully identify television advertisements. Therefore we concluded that the sequence of children's understanding of advertising that has been put forward to explain children's awareness of television advertising may not apply to other media, like the Internet.

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CHAPTER 1

INTRODUCTION

1. Overview

The thesis will be focus on children's understanding of the informative and persuasive intent of television advertisements and children's ability to recognize advertisement on Web pages in two cultures: UK and Indonesia. The thesis will begin with a discussion of the concerns about advertisements aimed at children, such as that they encourage an unhealthy lifestyle (e.g. over eating), materialism, parental pestering and the development of consumerism among children. It will continue with a description of the developmental theories that have been applied to children's awareness of advertisements and will explore past research using non-verbal methods to investigate children's ability to recognize and understand advertisements on television.

The thesis will include the first studies looking at Indonesian children's awareness of advertisements on television and the Internet. Therefore, a content analysis of the kind of advertisements that children in Indonesia are exposed to on television and the results of a questionnaire about Indonesian parents' attitudes to advertising will be provided in Chapter 2, as a background for the research in Indonesia.

Research on children's ability to understand the informative and persuasive intent of advertisement on television has been conducted for years however there is still debate about when children develop the skill to understand persuasive intent. Therefore, we carried out a series of experiments to investigate children's awareness of advertisement intent (i.e. persuasive and informative) using non-verbal methods. We showed children in the UK and in Indonesia an advertisement (experimental group) or programme (control group) and asked them to point to one of five realistic doll house models (a shop, a kitchen, a dinning room, a living room, and a garden) to indicate where they thought the

advertisement/programme wanted the doll to go. In these experiments we examined two factors which might impact on performance in this task. First, we compared the performance of children from Indonesia and UK because we had identified cultural differences in the amount and type of advertisements that children are exposed to in these two cultures. Second, we examined whether there were task variables such as the context in which the task was presented, type of instructions or word order that might impact on performance.

In the final series of studies, we look beyond television advertising and consider children's understanding of Internet advertising. Although the Internet is widely used by children there has been no research to date investigating when and how children recognize advertisements presented on a web page. In these studies, children from the UK and Indonesia were shown a set of children's Web pages (with and without advertisement) and were asked to point to any advertisements they could see, and to draw where they think advertisements should be placed. These studies provide an initial step in developing our understanding of children's advertising knowledge in different contexts.

At the end thesis, we discuss the implication of our results, how they might effect the current regulation and developmental theories, and what should be the next step for the government and media literacy campaigns (i.e. educating children about the nature of advertisements).

1.1 General Introduction

Children's ability to understand advertisements has been investigated for many years. However there are still many unresolved issues, particularly about the age when children can first understand the persuasive intent of advertising (Kunkel, Wilcox, Cantor, Palmer, Linn, & Dowrick, 2004), recognize the relationship between advertising and shopping (Macklin, 1985; 1987), and when children can first distinguish an advertisement from other media information (Gunter, Oates, & Blades, 2005).

In this chapter the issues related to children and advertising will be discussed. With one or two exceptions (Chan & McNeal 2004) most of the research has been carried out in the West, but in this thesis we not only tested children in the UK but also in Indonesia. Therefore in chapter 2 we provide some background to the research in Indonesia. The rest of the thesis falls into two parts. The first part (chapters 3-7) describes a series of studies examining a crucial methodological issue. This issue is whether the numerous researchers who have investigated children's awareness of advertising using verbal methods have underestimated children's understanding, because verbal questioning may be difficult for young children who have limited language skills. Some researchers, having used non-verbal tasks to measure children's understanding (Donohue, Henke, & Donohue, 1980; Macklin, 1983; 1987), have claimed that even very young children have some awareness of advertising. We will investigate these claims and assess whether the non-verbal tasks have been valid ones. In the second part of the thesis (chapters 8-10) we will turn to another issue – when children can first recognize an advertisement. This research has been carried out exclusively with reference to television advertising (Butter, Popovich, Stackhouse, & Garner, 1981; Levin, Petros, & Pretella, 1982), but as we will point out, children are faced by many other types of advertising, in particular, advertising via the Internet. We will describe a series of studies investigating when children can distinguish advertising and non-advertising material on Web pages.

1.2 Concerns about advertising

Television is available in all parts of the world and therefore virtually all children are exposed to television advertising (Oates, Blades, & Gunter, 2003). Children spend a large proportion of their leisure time watching television and other screen media (Livingstone & Helsper, 2004). For example, Cooke (2002) stated that in the United States and in the United Kingdom, children spend between four and five hours outside school time, watching some form of electronic media. Kunkel et al. (2004) reported that US children are exposed to more than 40,000 advertisements per year, and Carvel (2000) reported that in the UK children are exposed to about 18,000 commercials per year. In an analysis of

US television advertisements Gantz, Schwartz, Angelini, & Rideout (2007) found that 2-7-year-olds viewed an average of 17 minutes of advertisements (38 advertisements) and 8-12 year olds viewed 37 minutes (83 advertisements) per day for all products. This would be equivalent to nearly 14,000 television advertisements for 2-7 year olds, and just over 30,000 television advertisements for 8-12-year-olds per year. The latter figure is lower than the frequently cited figure given by Kunkel et al. (2004), but still indicates that children view a very large number of marketing messages on television.

In general, food advertising is one of the largest areas of marketing, for example in the US nearly $900 billion was spent on food advertising (Schor & Ford, 2007), and some food companies spend a large proportion of their marketing budget on advertising to children. For example, in 2004 McDonald's spent approximately $530 million in the U.S. on food advertising of which 40% was targeted at children (McGinnis, Gootman & Kraak, 2006). In the UK, OFCOM (2004) reported that over £500 million was spent on advertising foods, soft drinks and restaurants on television, and this included over £30 million that was spent specifically in children's television programming.

Barcus (1977) analyzed advertisements on children's television in U.S. during Saturday and Sunday and found 119 different types of products from 65 companies. Barcus noted that more than half were for cereal products, a quarter were for confectionery, and the rest were for toys, restaurants and miscellaneous products and service (Barcus, 1977). This pattern of results was confirmed in a second similar content analysis in U.S. (Barcus, 1980). This pattern has been shown to be stable over a period of time with foods being the dominant product advertised to children, especially cereals and confectionery (Gallo, 2001; Kunkel & Gantz, 1992; Lewis & Hill, 1998; Reece, Rifon & Rodriguez, 1999). For example, Byrd-Bredbenner (2002) recorded Saturday morning children's network programmes in 1993 and 1999 in the US. Byrd-Bredbenner found that there were 378 and 385 commercials in 1993 and 1999 respectively with food being the largest category of advertisements shown during the time of recording. Bread and breakfast cereals (40%) were the most advertised products in 1993, while fatty

foods and sweets (53%) were advertised more in 1999. Byrd-Bredbenner compared her results with Barcus (1977) and suggested that although there had been an increase in the number of advertisements between 1971 and 1999, the majority remained ones for food products.

The pattern is also typical of the types of advertising aimed at children in many countries (Roberts & Pettigrew, 2007). Given the large marketing budgets available for food advertising, as described above, it is not surprising that food is the most frequently advertised product aimed at children. The proportion of different products advertised is similar throughout the year, with the exception that in countries which celebrate Christmas toys are advertised more frequently at that time of year (Kunkel, 2001; Pine & Nash, 2002).

Many of the food advertisements seen by children are for products that are high in sugar, fats or salt - often defined as 'unhealthy' foods (OFCOM, 2007). For example, Gantz et al. (2007) showed that children in the US were more likely to be exposed to unhealthy food advertising for products such as sweets and snacks (34% of food advertisements), cereals (29%) and fast foods (10%). Only 1% of advertisements aimed at children were for fruit juice, and there were none at all for fruit or vegetables. Desrochers and Holt (2007) analyzed four weeks of television programmes in the US and found similar results demonstrating the overwhelming dominance of unhealthy products in food advertising to children.

The research into food advertising demonstrates the effects of advertising on children (Institute of Medicine, 2006). Some researchers have demonstrated a correlation between advertising and consumption (Strasburger & Wilson, 2002). For example, the more television children watched the more times they pestered their mothers for particular items (Galst & White, 1976). Woodward, Cumming, Ball, Williams, Hornsby and Boon (1997) found a relationship between children's viewing times and the frequency of consumption of some foods. Hitchings and Moynihan (1998) in the UK found that there was a relationship between remembering a specific food advertisement and the consumption of that specific food by children. Children usually requested food that they had seen on television.

Morton (1990) found that the most heavily advertised foods were most likely to be named as favourites by children.

Other researchers have demonstrated a causal effect (Borzekowski & Robinson, 2001; Halford, Gillespie, Brown, Pontin, & Dovey, 2003; Halford, Boyland, Hughes, Oliveira, & Dovey, 2007). For example, Borzekowski and Robinson (2001) found that a brief exposure to advertisements led children to choose the advertised food products more often. Halford et al (2003) asked children to view advertisements either for food or non-food items. They found that the children ate significantly more after exposure to the food advertisements, and that the overweight children in the sample were more likely to remember the food advertisements. Gorn and Goldberg (1982) conducted a study with 5- to 8-year-olds at a summer camp in Quebec over a period of two weeks. Gorn and Goldberg found that by showing fruit advertisements, children drink more orange juice, while by showing sweets resulted in the children drinking less orange juice. The research into casual effects therefore demonstrates that advertising does influence children's choices and behaviours.

The large number of food advertisements aimed at children has been cited as one reason why children in the West suffer from obesity (Centre for Disease Control Research and Prevention, 2004; Committee on Communication, 1995). For example, in the US, 25% of children and adolescents are overweight and 50% are expected to be overweight at some point during their lifetimes, and these figures have led to suggestions that unhealthy or 'junk' food advertisements during children's programmes should be prohibited (American Academy of Paediatricians, 2006). In the UK, the Royal College of Physicians reported that the number of obese 2- to 4-year-olds doubled between 1989 and 1998, and trebled between 1999 and 2002 for ages 6- to 15-years (Royal College of Physicians, 2004). The increase in obesity was a reason why the UK banned advertisements for unhealthy food and drink that are aired during children's programming for children under the age of 9 years (OFCOM, 2007).

Other health concerns have been raised about advertisements that although not specifically aimed at children, are still ones that children may see on television in many countries. These include advertisements for alcohol and cigarettes. Several Western countries (such as the UK) have banned all cigarette advertising on television, but other countries (such as Indonesia) allow such advertising. In contrast, most Western countries permit alcohol advertising, but many Muslim countries (like Indonesia) ban alcohol advertising.

As the most widely available and frequently used drug, alcohol has become firmly established in US culture (Dube, Miller, Brown, Giles, Felitti, Dong and Anda, 2006) and has become one of the most frequently advertised products on television and in other media (Center on Alcohol Marketing & Youth, 2002; 2003; Ellickson, Collins, Hambarsoomians & McCaffery, 2005; Garfield, Chung, & Rathouz, 2003; McClure, Cin, Gibson, & Sargent, 2006). Collins, Ellickson, McCaffery, and Hambarsoomians (2005) estimated that adolescents view about 250 alcohol advertisements on television each year in the US, and several researchers have suggested alcohol advertising contributes to adolescent drinking (Atkin & Block, 1981; Atkin, Hocking & Block, 1984; Austin, Chen, & Grube, 2006; Dube et al. 2006). For example, Grube and Wallack (1994) interviewed 11-12-year-olds about beer advertisements, their attitudes toward alcohol advertisements, and their intention to consume alcohol when they reached adulthood. Grube and Wallack found that children who were aware of the beer advertisement were more likely to have a positive attitude towards alcohol consumption and were more likely to say that they intended to drink alcohol when they were adults. In another study of beer advertising Collins, Ellickson, McCaffery, and Hambarsoomians (2007) surveyed 11- and 12-year-olds, and found that exposure to alcohol advertising during very early adolescence predicted both beer drinking and drinking intentions a year later. Children who were highly exposed to alcohol advertisements were more likely to drink (50%) and more likely to intend to drink (36%).

Children may also be affected by cigarette advertising. A large number of children do smoke; for example, DiFranza and Tye (1990) estimated that minors,

(less than 18 years of age) in the US consumed cigarettes worth a total of more than $1 billion. Meier (1991) suggested that 60% of US smokers started to smoke by the age of 13 years and 90% started before the age of 20 years. The US Federal Trade Commission (2004) reported that in 2002 the major cigarette companies spent $12.5 billion on advertising in the US, which was an 85% increase since 1998. Such large spends may have an effect not only on adults but also on children who see the advertisements and such advertisements have been blamed for encouraging children to start smoking (Pollay, 1995). Making a similar argument, Goddard (1992) suggested that cigarette advertisements encouraged children to smoke in the UK.

Arnett and Terhanian (1998) produced evidence that specific cigarette advertisements can have an effect on children and young people. They asked 12- to 18-year-olds about their attitude towards printed cigarette advertisements and found that the adolescents believed some, like Camel and Marlboro advertisements, made smoking more appealing. Arnett (2001) asked 12- to 17-year-olds about 6 cigarette advertisements (5 aimed at young people and 1 aimed at older adults) and found that participants believed that the advertisements aimed at young people would attract children to smoke. Wakefield, Germain, Durkin and Henrikson (2006) also found that the more children (age 14 years) were exposed to the cigarette advertisements the more likely they were to recall that particular brand.

Apart from food the most frequent category of product advertised to children is toys (Pine & Nash, 2002). Toys do not cause as many concerns as products like unhealthy foods, nonetheless encouraging children to want toys and games may generate a materialistic attitude, especially in countries like China where previous generations of children have been discouraged from having any materialistic attitudes at all (Blades & Oates, 2007). Materialism may be defined as children's view that the acquisition of a product is the basis for determining one's personal worth (Kunkel et al., 2004). The Centre for a New American Dream (2004) stated that 95% of adults thought that children spent too much time on buying and consuming things.

Children who watch more television develop more materialistic values (Adler, Lesser, Meringoff, Robertson, Rossiter, & Ward, 1980). Materialism in advertisements research is often measured as the level of exposure to television related to children's consumption motives or values (Chan, 2003; Buijzen & Valkenburg, 2003; Nairn, Ormrod, & Bottemley, 2007) and product requests (Robertson & Rossiter, 1977; Pine & Nash, 2002; Pine, Wilson & Nash, 2007). For example, Chan (2003) surveyed Hong Kong children between the ages of six to thirteen years about their television viewing habits, degree of co-viewing with parents and materialistic behaviour. Children's materialistic attitudes were measured by using 14 items (e.g. level of happiness, the need of more allowance and the desire to own new toys). Chan divided children's viewing hours into three categories (low = less than 21 hours a week, medium = 22 – 29 hours a week and high more than 30 hours) and co-viewing with parents (never or seldom, sometimes and always). Children who had medium and high exposure to the television and never or seldom watched television with parents were more likely to develop materialistic behaviour, and felt a need of having more allowance and owing the newest things (Chan, 2003). Buijzen and Valkenburg (2003) asked children between the ages of 8 to 12 in Netherlands to complete a paper and pencil questionnaire and found similar results. Children who viewed more television advertisements were more likely to develop materialistic attitudes than children who watched fewer television commercials. The same conclusions was reached by Nairn, Ormrod and Bottomley (2007) who surveyed 9 to 13-year-olds about their level of television and computer exposures with their materialistic attitudes. Nairn et al. (2007) found a positive correlation between the times of exposure to television and the children's materialistic attitudes. Children who were highly exposed to television and computer were more likely to adapt materialistic behaviours.

Robertson and Rossiter (1977) found evidence that the greater exposure to television viewing had an impact on the number of products children requested. They interviewed 6-, 8-, and 10-year-olds boys' about Christmas present requests and found that children who viewed more television prior to Christmas requested more toys and games than children who watched less television. In similar studies

Pine and Nash (2002), and Pine, Wilson, and Nash (2007) asked children to write letters to Santa Claus listing what the children wanted for Christmas. They found that older children who watched commercial television, especially girls, requested more of the advertised products. Younger children who watched more commercial television not only asked for more items, but also wanted more branded goods.

Research on brand awareness usually centres on children's ability to recognize or recall brand by showing children a series of brand logos, brand characters or advertisements (Valkenburg & Buijzen, 2005). Young children can recognize a particular brand even before they can recall the brand (Macklin, 1983; Goldberg, 1990; Valkenburg & Buijzen, 2005). Older children can recognize the majority of brands in advertisements aimed at them. For example, Kopelman, Roberts, and Adab (2007) showed 20 cards, each displaying a coloured image of a frequently advertised brand logo of food and drink (e.g. McDonald's, McVities, Haribo, Ribena and Pringles) to children age 9 -11 years and found that the children recognized four-fifths of the logos.

Children develop brand preferences before they become consumers (Gunter & Furnham, 1998) and Guest (1964) suggested that about a quarter of brand preferences persist from childhood to adulthood. Robinson, Borzekowski, Matheson, and Kraemer (2007) asked children aged 3- to 7- years to participate in food-tasting play, in which the children were provided with various sets of healthy and unhealthy food. All the sets of food were presented with or without a McDonald's logo. Robinson et al found that children who watched more television at home and ate McDonald's products were more likely to prefer food or drink that had the McDonald's logo on the package irrespective of the type of food. Wanting products in general, and brands in particular, means that a further concern about advertising is how it might lead children to pester their parents to buy them advertised items. A comparison of families in Japan, England, and the US found that there was a positive relationship between the amount of television that children watched and the children's requests for products (Robertson, Ward, Gatignon, & Kless, 1989).

Brand recognition and recall by children may influence purchase decisions by the family (Valkenburg & Buijzen, 2005). For example, Galst and White (1976) found that the time children spent watching television not only correlated with children's consumption of the foods advertised on television but also that children tried to influence their parents to buy the most frequently advertised products, such as cereals and candy. Brody, Stoneman, Lane, and Sanders (1981) found similar results when they showed parents and children programmes that included food advertisements. After seeing the advertisement the parents and children were observed in a large room that resembled a mini supermarket; the children attempted to influence their parents to buy the food products that had been shown on television (Brody et al., 1981).

Advertisers want to target children because children have extensive spending power and can influence family purchasing decisions (Buckingham, 2000; Clarke & Smallbone, 2001). Flack (2001) stated that UK teenagers received an average of £12 per week and that children aged 11-16 years spent £51.40 per week. Although this is a small amount of money compared to what adult's spend, children's spending is concentrated on a few products (particularly food, entertainment, toys and fashion items) and so children's total spending is an important proportion of some markets (Gantz et al., 2007). As noted above, children can also influence family spending by pestering their parents for a product they have seen on TV (Jarlbro, 2000). For example, more than 90% of parents said that their children asked for toys that they had seen advertised (Lyle & Hoffman, 1972).

Furthermore, Ward and Wackman (1972) surveyed mothers of 5- to 12-year-olds about the frequency of children's purchase influence attempts for 22 products that were frequently advertised on the television (e.g. food, toy, game, clothing, toiletries, camera, and cleaning products). They found that mothers of 5- to 7-year-olds felt that children tried to persuade them to buy products. Atkin (1978) observed actual parent-child interaction on cereal buying decision-making in supermarket. Cereal was picked as the product to be investigated because it was heavily advertised on television. Atkin observed the parent-child interaction while

they were making decisions about cereal purchasing and found that two-thirds of the children initiate a request or demand for a particular cereal brand. When asked why they picked the particular brand of cereal children reported that they had seen an advertisement for the cereal on the television.

A recent study by Buijzen and Valkenburg (2003) showed the same result. They distributed questionnaire to children aged 8- to 12 years and their parents in the Netherlands. Parents and children were presented with 9 products (i.e. clothes, computer games, toys, candies. snacks, money, sport equipments and CDs, school stationery) and both the parents and their children were asked whether the children never, sometimes or often request these products. Buijzen and Valkenburg found a significant correlation between exposure to advertisements and the number of products requested, though the strength of the relationship declined as children got older.

Contemporary children receive more pocket money than previously and therefore have more to spend on products. In 1990, in the US, a weekly allowance averaging at $8.50 was given to a 10 year old, but a decade later, the same weekly allowance had doubled to an average of $16.90 and this increase was greater than accounted for by inflation (Oldenburg, 2000). In the year 2000, US children up to the age of 12 years spent $27.9 billion of their own pocket money while also influencing approximately $250 billion of their parents' spending in the US (Oldenburg, 2000). It has been estimated that children in the main urban areas of China spend more than $6 billion of their own money and influence more than $60 billion of family spending (McNeal and Zhang, 2000). According to Bergler (1999), children in Germany between the age of 6 and 17 years have financial resources of about 12 billion Deutschmarks. The annual cash flow of UK children between 7- to 16-year-olds was about £70 million (Halifax, 2004) and UK parents spend about £7 more in a supermarket when they go shopping with their children (Parker, 2001). Lindstrom (2003) stated that in total children spend nearly $2 trillion a year worldwide and affect nearly 60% of all brand decisions taken by their parents. The size of children's spending power emphasises the point made

earlier that advertising to children is a large and important aspect of many companies marketing.

Even very young children will pester their parents for products especially when they associate the product with good experiences (Valkenburg & Cantor, 2001). For example, Chan & McNeal (2004) found that around the age of 4 to 5 years, children in China were starting to ask their parents to buy them things and when their parents refused, they started to negotiate with their godparents about buying products. Greenberg, Fazal, and Wober (1986) surveyed UK children aged 4 to 13 years and found that all the children had asked their parents to buy something that they had seen on advertisements on the television.

Children use various persuasion techniques to get the products that they want and these strategies become more sophisticated as the children get older (Ertfmier & Dyson, 1986; Weiss & Sachs, 1991). For instance, Clark and Delia (1976) interviewed 7- to 11-year-olds about their strategies for persuading their parents, including how they would persuade their parents to buy them something. Clark and Delia found that older children not only used more elaborate arguments to ask for a product, but would also use further counter-arguments if parents gave a refusal. Such arguments can lead to family conflicts when parents refuse to buy a product because they cannot afford it or it is inappropriate (Atkin, 1975; Isler, Popper, & Ward 1987; Ward & Wackman, 1972). For example, Goldberg and Gorn (1978) showed children an advertisement for "Ruckus Raisen Bran" (a fictitious toy advertisement) but told the children that their mother preferred to buy them a ball instead of the toy in the advertisement. Goldberg and Gorn found that most of the children expressed unhappiness when they thought the product request would be refused by their parents.

Children begin to make independent purchases from about 5 or 6 years of age (Chan & McNeal, 2004; McNeal, 1992) and as children become consumers themselves they are less likely to accept what advertisements promote and more likely to evaluate critically and compare products (Livingstone & Helsper 2004; Unnikrishnan & Bajpai, 1996; Valkenburg & Cantor, 2001). Consequently they

may start questioning the intention of advertisements and believe there are more things behind an advertisement than the advertisement shows (Blatt, Spencer & Ward, 1972). Ward (1972) interviewed children between the ages of 5 and 12 years about their attitude towards television advertising and found that older children (after 9 years of age) often believed advertisements were hiding information from them. Oates, Blades, Gunter and Don (2003) supported the research by Ward. Oates et al investigated children between 6 and 10 years and found that the youngest children were more likely to believe advertisements. The 8-year-olds were becoming critical especially if their own experience of a product was a negative experience, and by the age of 10 years children were less likely to believe advertisements in general.

As previously mentioned, children are affected by advertisements on the television (i.e., unhealthy lifestyle, pester power and materialism). Nonetheless, we have to be cautious in accepting and implementing the results of research about the effect of advertising on children. Most of the methods used in looking at the effects of advertisements on children are observation, questionnaires, non-verbal and verbal methods in a research setting. In food advertisements and consumption studies, for example, children have been exposed to the advertisement briefly and then asked to choose the food they want to eat. These studies have found a correlation between food consumption and choices with the advertisements shown (Woodward et al, 1997; Hitchings & Moynihan, 1998; Halford et al, 2003; Halford et al, 2007; Borzekowski & Robinson, 2001; Gorn & Goldberg, 1982). However, such studies were conducted in controlled environment, and children may not make the same choices when different food options are available to them, for example when they are choosing between more or less familiar food. For example, Borzekwoski and Robinson (2001) used advertisements that frequently aired in children television and found children would choose products shown previously. Familiarity with the product might the reason for children in Borzekwoski and Robinsion study picked the advertised products.

In another example, Halford et al. (2007) showed children a cartoon that included food in the first week and non-food advertisements in the second week, after which children could eat as many foods as they wanted. Halford et al. found that when children watched cartoon with food advertisements, they ate more than when they watched cartoon with non-food advertisement. However, Halford et al. did not mention the time of the day when they conducted their experiments. It is possible, for example, that children shown food advertisement near to the afternoon might be hungrier and more likely to eat more food then children shown the advertisements in the afternoon. Clearly, time, number of exposures and type of food advertisements need to be considered in investigating the effect of food advertisements on children.

Research on cigarettes and alcohol advertising has mostly used questionnaires (Dube et al, 2006; Atkin & Block, 1981; Atkin, Hocking & Block, 1984; Meier, 1991; Arnett, 2001; Goddard, 1992) or a combination of interview/discussion and questionnaire (Grube & Wallack, 1994; Wakefield et al., 2006) to investigate children's attitude and behaviour towards advertisements. Some of the concerns of using questionnaire in the researches are the reliability and validity of the content questionnaires and the applicability to all the participants on the experiment. For example, Arnett (2001) used questionnaires to investigate the attitude of 12 to 18 year olds t towards cigarette advertisements and found that children believed cigarettes advertisements tempt them to start smoking. Unfortunately, Arnett (2001) did not include the questionnaire in the published report so we did not know the validity of the questionnaire and there is a possibility that the younger children may have had difficulty understanding the meaning of the statements or the questions.

Apart from the concerns about products that are typically advertised to children, there have also been concerns about the style and presentation of such advertisements. Advertisements may include techniques that children, unlike adults, are less proficient at interpreting. For example, Kinsey (1987) pointed out that advertisements aimed at children often included: prices that are made to seem less by words like 'only'; toys or foods that appear magnified; fantasy situations

that are used as appeals; appeals to children's vanity; and prizes used as gimmicks. Advertisers may also mislead by claims that products are "better than" or "the best of" other products (Gunter et al., 2005) or "part of a balanced breakfast" (Kunkel & Gantz, 1992). Children may not always be able to interpret such techniques. For example, Atkin and Gibson (1978) found that fewer than one in three of 4- to 7-year-olds could understand the claim "part of a balanced breakfast" because some children interpreted this phrase to mean that the cereal was an essential part of a breakfast. Gunter et al. (2005) pointed out that most confectionery advertisements in UK aimed at children use fantasy appeals to attract children but that young children might have difficulty to distinguish between reality and fantasy (Valkenburg & Cantor, 2001). When Sharon and Wolley (2004) questioned children about the differences between reality and fantasy they found that children under the age of 4 years were not sure which properties were aspects of real people and which applied to non-human characters.

Kunkel and Gantz (1992) suggested that advertising to children associates a product with fun and happiness, rather than to provide any factual product-related information. For example, a McDonald's advertisement featured Ronald McDonald dancing, singing and smiling in a restaurant without any mention of the actual food products available (Kunkel et al., 2004). In other words, advertising to children often avoids factual information, emphasizing instead that advertisements are entertainment and "enjoyable for their own sake," rather than providing any real consumer information (Seiter, 1993), and this may make it difficult for children to distinguish advertisements from the surrounding programmes.

Children's ability to distinguish advertisements from programmes is the first step in children's developing awareness of advertising on television, and we will discuss this in section 2 below. Most of the discussion above has focused on spot advertising on television, and this type of advertising has also been the focus of most research into children's recognition or understanding of advertising. But contemporary marketing may move away from such spot advertising and make greater use of other techniques such as product placement. Like other forms of advertising product placement can have an effect on children. For example, Auty

and Lewis (2004) showed children aged 6 -12 years a scene from a film, which featured Pepsi Cola while children in a control group saw a similar clip with no branded product. They found that children in the experimental group were more likely to pick Pepsi rather than Coke after seeing the film. There has been very little research into children's awareness of product placement, but we assume that children may find it harder to identify product placement than to identify a spot advertisement, though this is an aspect of children's understanding that requires more research.

1.3 Children's understanding of advertisements

Kunkel et al. (2004) stated that for the children to understand television advertisements they require two skills. The first skill is that children must be able to distinguish between advertisements and programmes, and the second is that children must understand the persuasive intent of advertisements. Understanding persuasive intent does not necessarily mean that children have a full understanding of advertisements, because there are also many other aspects to understanding advertisements. For example, Robertson and Rossiter (1974) suggested that children can only be said to be aware of advertisements if they can achieve the following five criteria: the ability to distinguish between advertisements and programmes; an awareness of the source of the advertisements; a knowledge of the target audience for each advertisement; understanding of the symbolic nature of advertisements; and the ability to criticize and evaluate products shown in the advertisements. However, the focus of this thesis will be on the two key aspects highlighted by Kunkel et al. – understanding the purpose of advertisements (in chapters 3-7) and distinguishing advertisements (in chapters 8-10).

Piaget's four-stage child developmental theory has often been quoted to explain children's comprehension of advertisements (Bartholomew & Donohue, 2003). In the sensori-motor period children develop very limited language and cognitive skills that restrict their understanding of advertisements. However researchers have shown an increased awareness of advertisements following

transition into the preoperational stages of development. Children can distinguish advertisements from programmes, based on perceptual cues, but often express positive attitudes towards them (Gunter et al., 2005), and may accept them as being truthful and provided mainly for entertainment (John, 1999). However, whilst children may recognize advertisements and respond to them, young children are egocentric (Selman, 1980) and because of this may have difficulty realizing that advertisements present products from the point of view of the advertiser (Kunkel, 2001).

Children in the concrete and formal operational stages begin to understand advertisements to some extent. Lawler and Prothero (2002) suggested that this is because children in the concrete operational stage (7 to 11 years) begin to reason and begin to evaluate the messages in advertisements. However knowledge of advertising tactics and product appeal does not generally surface until age twelve, with the onset of the formal operational stage (John, 1999). Smith, Cowie, and Blades (2003) suggested that the onset of formal periods reflects the potential for problem-solving in an adult manner with reasoning based from experience and learning. So that by this stage children have the necessary abilities to analyse and criticise advertising messages.

Other than Piaget, one of the most frequently cited theories of advertising understanding is that of Roedder's information processing approach. Information processing refers to how children encode and analyse information about the world around them (Roedder, 1981). Roedder classified children into three processor types corresponding with certain age groups. Children under 7 years are thought of as limited processors, with as yet undeveloped abilities to store learnt information and effectively retrieve it for subsequent use. Between the ages of 7 and 11 years, children become cued processors, and develop the ability to encode, retrieve and learn strategies when prompted. By 12 years, children are capable of processing strategically, defined by their use of advanced rehearsal, verbal labelling and rehearsal strategies to select, encode and recall information.

Roedder (1981) demonstrated the utility of these classifications by applying them to 'central-incidental' learning and children's memory development. 'Central-incidental' learning is defined by the ability to focus on information central to understanding of the task by ignoring that contained in the periphery. Strategic processors are able to ignore peripheral information, whilst cued processors require help to do so effectively, and limited processors are unable to ignore peripheral information. Similarly, children's development of memory and learning show strategic processors are better at learning and remembering new information, cued processors are able to do so with assistance, and limited processors express difficulties in any task capacities. When considering advertising intent, strategic processors have the cognitive skills to understand the persuasive messages behind them, more so than cued processors who need external prompts to understand advertisements and are generally unable to retrieve and use their knowledge effectively (John, 1999).

1.3.1 Children's ability to identify advertisements

Children's ability to recognize advertisements has been tested using different methodologies. Typically, non-verbal experiments show children videos comprised of extracts from both programmes and advertisements, and ask children to respond to advertisements by some behaviour; for example by raising a hand (Ballard-Campbell, 1983), or by placing a hand on a coloured square and keeping it there for the duration of the advertisement (Bijmolt, Claassen, & Brus, 1998; Stutts, Vance, & Hudleson, 1981). In verbal experiments children are usually shown a video or video clip, and asked to inform (yes/no) or call out when they believe the extract they are looking at is an advertisement (Butter et al., 1981; Levin et al., 1982; Palmer & McDowell, 1979). Alternatively children may also be observed to determine any changes in the level of attention occurring between watching a programme and watching an advertisement (Wartella & Ettema, 1974; Zukerman, Ziegler, & Stevenson, 1978). The different methodologies used by researchers have led to different results.

Stutts et al. (1981) showed children aged 3, 5, and 7 years a six minute Bugs Bunny cartoon that contained a 30 second Nestle's Quik advertisement (milk drink). Children were asked to put their hands in their laps at first and when they believed that they saw an advertisement they were asked to put their hand on the red square for the length of the advertisement. Stutts et al. found that younger children (aged 3) could not discriminate between advertisements and programmes but the 5 and 7 year olds could. Bijmolt et al. (1998) conducted a similar study to Stutts et al. (1981) but using a different advertisement (chocolate drink) and with older children between the ages 5 to 8 years. Bijmolt et al found that 90% of the children were able to distinguish between advertisements and programmes, but the younger children failed to describe verbally the difference between the two (only 8% of the 5- and 6-year-olds could answer correctly).

Levin et al. (1982) asked children age 3, 4 and 5 years of age to distinguish between advertisements and programmes. Children were shown three different videotapes, each of the videotapes consisted of 14 children's TV programmes and 7 advertisements for children, as well as 7 advertisements for adults, all with separators between the advertisements and programmes. The children were asked to tell the experimenter when an advertisement was being shown. Levin et al found that 3-year-olds could distinguish between advertisements and programmes, at better than chance levels and children's performance increased with age, with the 5-year-olds being 80% correct. Butter et al. (1981) showed 4- and 5-year-olds four different videotapes that consisted of six segments of a children's programme with four 30 seconds advertisements in between the segments. Butler et al found, like Levin et al, that children from the age of 5 years were able to recognize about 80% of the programme segments and commercials.

Another method used to investigate children's awareness of advertisements is an observation technique in which an experimenter monitors children's auditory and visual attention. Wartella and Ettema (1974) observed children's (aged 3 to 8 years) level of attention when they were viewing a programme that included 12 different advertisements. Wartella and Ettema found that even the youngest children performed well in recognizing the transition

between programme and advertisements. This provides support for Butter et al. (1981) and Levin et al. (1982).

Kunkel (1988) investigated children's (aged 4-5 and 7-8 years) ability to distinguish between programmes and a character endorsed advertisement, commonly referred to as 'host-selling'. Half the children were shown a Flintstones cartoon, which included the same character (a Fruity Pebbles Flintstones cereal) advertisement as the one in the programme, and also a Flintstones cartoon with different character (Smurfberry crunch cereal) advertisement. The other half of the children watched a Smurfs cartoon with Smurfberry crunch cereal advertisement and a Smurfs cartoon with a Flintstones cereal advertisement. Kunkel (1988) found that, for both age groups, the children who viewed the same characters in the advertisement as in the surrounding programme had more difficulty in discriminating between the programme and the advertisement.

In summary, researchers who have tested children's ability to distinguish advertisements and programmes have often found that children can do so, to some extent, from about the age of 3 years and are usually able to distinguish nearly all advertisements by the age of 5 years (Levin et al., 1982). However, most researchers have shown children advertisements that were clearly different from the programme or programme excerpts. This was a valid way to assess children because most 'spot' advertisements are usually different in style and content from the surrounding programmes. However, as Kunkel (1988) showed, older children may have greater difficulty if an advertisement includes the same characters as the surrounding programme.

The studies discussed above were about television spot advertising, and most were carried out many years ago, and mainly in the US. Contemporary young children, who are likely to have more media experience than children 20-30 years ago may be more efficient at identifying advertisements. This is an area that could benefit from contemporary research. Nonetheless, it can be assumed that contemporary children should be at least as competent as the children described in the above studies.

We will return to the issue of identifying advertisements later in the thesis where we describe a series of studies investigating whether children can identify advertisements on Web pages. All the previous research into the recognition of advertisements has been carried out in relation to television advertising and there has been no research into the recognition of advertisements in other media such as the Internet (Fielder, Gardner, Nairn, & Pitt, 2008; Neeley, 2007). Therefore in chapters 8-10 we discuss studies in which we showed young children Web pages which included advertisements, and asked the children to point to what they thought were the advertisements.

1.3.2 Children's understanding of advertising intent

For children to be able to understand advertisements, they have to understand that the purpose of advertising is to persuade the viewer of the advertisement to carry out a particular behaviour - usually buying the product that is advertised. A full understanding of advertisements would also include an awareness of who makes advertisements, who pays for them and who benefits from them (Young, 1986; 1990).

Children's awareness of advertising intent has been investigated by asking children verbally (Ward and Wackman, 1973; Ward, Wackman, & Wartella, 1977), or by asking children to point to pictures (Macklin, 1985; Donohue, Henke & Donohue, 1980). Martin (1997) showed that different factors could result in different outcomes. Martin suggested that the factors included the method used (verbal or non-verbal), the researchers' definition of advertising intent (whether the definition focused on informative or persuasive intent) and the age of participants. In this section we will focus on children's ability to understand that an advertisement is a persuasive message. First we will discuss the studies by researchers who have used verbal methods to find out at what age this understanding is achieved, and second, we will consider the 'non-verbal' studies that have attempted to examine the same question.

1.3.2.1 Verbal studies

In the verbal methods children were asked to explain the intent of advertising verbally (i.e. "What is the purpose of an advertisement?"). For example, in one early study Ward and Wackman (1973) interviewed children between the ages of 5 to 12 years by using open-ended questions about advertising in general and the purpose of advertisements (e.g. "What is a commercial?", "What is the difference between TV commercials and TV programmes?" and "Why are commercials shown on TV?"). Children's responses were divided into low (e.g. to entertain), medium (e.g. to inform), and high level (e.g. to sell a product) levels of understanding. Ward and Wackman found that when asked what an advertisement is, two-thirds of children between the ages of 5 to 8 years showed only a low level of awareness of intent, and three-quarters of the 9- to 12-year-olds showed a medium awareness. Less than one-tenth of the 9- to 12-year-olds had a high level of understanding.

Using the same measures and technique as Ward and Wackman (1973), Ward et al. (1977) found similar results. They interviewed 5-, 8- and 11-year-olds about their understanding of advertising. When children were asked what a television advertisement was only a few 6-year-olds, a quarter of 8-year-olds and less than half the 11-year-olds knew the persuasive intent of advertisement. Similar results were found by other early researchers using verbal methods (e.g. Christenson 1982; Meyer, Dohonue, & Henke, 1978; Robertson & Rossiter, 1974; Rubin, 1974).

More recent researchers, also using interview techniques, have confirmed the findings from the earlier studies. Oates, Blades and Gunter (2002) showed a recorded cartoon video, which included six unfamiliar advertisements (repetition of three chosen novel advertisements for confectionery, for a bubble gum and for a fruit drink) to children aged 6, 8 and 10 years. The next day children were asked open-ended questions on the purpose of the advertisements that they saw. The children's responses to questions were divided into four categories such as to persuade, to inform, for a break or to amuse, and don't know or did not answer.

Oates et al. found that when children were asked questions about the persuasive intent of the advertisements, only a quarter of the 8 and a third of the 10-year-olds understood the persuasive intent of advertising. Their findings were supported by Bijmolt, Claassen, and Brus (1998). They asked the children age 5 to 8 years to explain what the purpose of advertisements was, and why advertisements were shown on television. Bijmolt et al. (1998) found that less than half the children could understand the persuasive intent of advertising. In one of the few studies carried out in Asia, Chan (2000) interviewed children of 5 to 12 years in Hong Kong on what television advertising wanted the children to do. Chan found that children under the age of 8 years had difficulty understanding the persuasive intent of advertisement. Therefore, the common finding from all these verbal studies is that children's understanding of advertisements develops only gradually, and that only small numbers of children before the age of about 8 years describe advertising in terms of persuasive intent.

Rather than one-to-one interviews a few researchers have used other verbal techniques to see if alternative methods affect children's performance. For example, Oates, Blades, Gunter and Don (2003) divided 6- to 10-year-olds into focus groups in which the children were asked to discuss advertisements. Oates et al found that children between the ages of 6 and 10 years understood the informative intent of advertisements, but only when children reached the age of 8 years did they start to realize the persuasive intent of advertisements. Chan and McNeal (2006) used a multiple-choice questionnaire, which was given to 1800 children aged 7 to 12 years in China. The children were given typical questions like "What are television advertisements?", and each of the questions was given 5 to 6 answers and children were asked to tick the answer they thought was correct. For some questions one of the answers was correct and for some questions two of the answers were correct. One limitation of this approach was that children, who had to make a response to each question, could sometime be guessing and the chance of guessing correctly varied from 20% to 40% per question (depending on the number of choices and number of correct answers). Nonetheless, and despite the likelihood of some correct answers being guesses it was not until after 8 years of age that children scored more than half correct on all the questions.

In summary, studies using a variety of verbal methods, carried out over a number of years, and in several countries have all come to a common conclusion, that children under 8 years of age have difficulty demonstrating a full understanding of the purpose of advertising. The proportion of children before the age of 8 years demonstrating such understanding does vary from study to study, but may be related to the specific technique – for example the multiple choice procedure in Chan and McNeal produced a higher proportion of successful children than most of the one-to-one interview studies described above. Nonetheless, no researcher has found that more than 50% of the children under 8 years give appropriate answers to questions about persuasive intent, and most researchers have found much lower proportions (e.g. Oates et al., 2002). Taken together, the results from the verbal studies are quite consistent about children's understanding of persuasive intent. So consistent that Kunkel et al. (2004) came to the conclusion that children younger than 8 years of age had so little understanding of advertising that Kunkel et al recommended the banning of all television advertisements that were aimed at children younger than this age.

Despite the similarity of the conclusions made by researchers using verbal techniques, other researchers have claimed that children have an understanding of persuasive intent at very much earlier ages. These researchers have argued that verbal methods underestimate children's knowledge because verbal techniques are not appropriate for younger children who may have difficulty expressing concepts in language. For this reason some researchers have tried to design 'non-verbal' techniques to assess children's understanding. These methods will be discussed below, but we note that even these alternative methods include much verbal information (in terms of the instructions given to children). However, what distinguishes the 'non-verbal' methods from the verbal ones described above is that children's responses are generally responses like pointing to a picture or a photograph, and this does not involve the children having to make a verbal response.

1.3.2.2 Non-verbal studies

Donohue et al. (1980) were the first researchers to investigate whether a non-verbal task was a better way to measure children's knowledge of persuasive intent. Children were asked to watch a cereal advertisement and then they were asked what the character on the advertisement wanted them to do. The children were asked to point to one of two pictures, one of which showed a shopping scene. The other picture showed a child watching television. Donohue et al. (1980) found that three quarters of 2-3-year-olds, three quarters of 4-5-year-olds and nearly all 6-year-olds pointed to the shopping picture.

On the basis of this study Donohue et al suggested that children do understand the intent of television commercials at a young age. However, the Donohue et al study was limited because children had only two pictures to choose from. Neither picture was illustrated in Donohue et al's paper and therefore we do not know whether the shopping scene was in some way more attractive than the other picture. Donohue et al could have made sure that both pictures were equally attractive by asking a group of young children just to point to the pictures (without any reference to advertising or other issues) to see if there was any bias in which picture the children chose. However, Donohue et al did not check that the pictures were equally attractive and therefore it is hard to interpret the children's choice of the shopping scene. Even if the pictures were in themselves equally attractive and the children chose the shopping picture because they associated the advertisement with shopping, this would indicate only that the children were aware of a connection between a television advertisement and going shopping. This association might have been no more than children realizing that cereal is shown on television and that cereal is found in shops. Such an association would indicate some limited awareness that there is a link between advertisements and shops, but this would be like the children in verbal experiments (see section 1.3.2.1) who when asked what advertisements are for say that they are to show you what is in the shops. This demonstrates a connection between advertisements and shops, but does not in itself indicate that such young children really understand the nature of persuasive intent. Nonetheless, Donohue et al's study is one of the most

frequently cited experiments by later writers who have argued that very young children can understand persuasive intent.

Macklin (1985) replicated the Donohue et al. (1980) study. Thirty children aged 3, 4, and 5 years were shown two cereal advertisements (one animated with cartoon elves, and one with an actor as a milkman). Children then were shown two similar pictures (a picture of a mother shopping who was shown reaching for the advertised product with a child sitting in a pushcart, and a picture of an expressionless child watching TV). As in the Donohue et al study, they were asked to point to one of the picture to indicate what the advertisement wanted them to do (i.e. the shopping picture). Macklin found a similar result as in Donohue et al. because the young children were more likely to point to the shopping picture if they had seen either of the advertisements. However, like Donohue et al, Macklin did not check whether the two pictures were equally attractive. Indeed, the shopping picture might well have been more interesting than one of an expressionless child watching television.

Another criticism of both Donohue et al. (1980) and Macklin (1985) is that the shopping trip picture in both studies included the cereal packet that the children had seen earlier on television. But the other picture only showed a child watching television (and did not include the cereal). Therefore, children who pointed to the shopping trip might have done so simply because that picture included the cereal packet. This would be no more than a simple association between the television advertisement and the picture.

Macklin (1985) carried out a further study in which preschoolers were shown four pictures; the two described above and two more (including one that showed the advertised product). Macklin found that only 12% of the preschoolers pointed to the shopping picture, which was particularly poor performance given that guessing alone should have resulted in 25% correct responses. Macklin (1987) also investigated 3-, 4- and 5-year-olds by using ten pictures one of which was a shopping scene. The younger children did not chose the shopping scene any better than chance expectations. The 5-year-olds were slightly better than chance,

and so Macklin claimed that at least a few of the 5-year-olds understood the persuasive intent of the television advertisement. But the shopping picture was always shown first on the page (at the top left) and was the only one that included the product, and therefore the 5-year-olds may have just associated the product in the picture and the advertisement, and does not indicate that the 5-year-olds were aware of the persuasive intent of the television advertisement.

In a further study Macklin (1987) showed preschoolers between the age of 3 to 5 years a television advertisement and then the children could choose to move to one of three play areas (a play hot dog stand/outdoor restaurant, a play kitchen complete with the appliances, and a play store with shelving, cash register, play money and shopping cart) to reflect what the advertisement wanted them to do. Macklin assumed that children going to the pretend shop did so because they were aware of the persuasive content of the advertisement. Macklin found that 40% of older preschoolers (age 5 years) were able to pick the shop and act out the shopping scene. This was only a small proportion of the children and only slightly better than chance (33%) and this study is open to the similar criticisms as the previous ones discussed in this section. Children may have gone to the pretend shop for reasons other than understanding persuasive intent. For example, the pretend shop could have been the most attractive area, or it could have been the closest area to the television the children had watched. But Macklin gave no details of the play areas or where they were.

Ballard-Campbell (1983) replicated and modified Donohue et al.'s study. He showed two toy advertisements (Nerf Cycle and Superjock Basketball) to children aged 4, 6 and 8 years in random order. Children were then presented with three photographs (a child and mother at the store buying the advertised products, a child watching the advertised product on television and a child playing with the advertised toys). The children were asked to point to one of three photographs to indicate what the advertisement wanted them to do, and then to explain the reason for each of the advertisements. All the advertised products were clearly presented in each photograph. Ballard-Campbell (1983) found that one-tenth of the 4-year-olds, a third of the 6-year-olds and four fifths of the 8-year-olds correctly pointed

to the photograph (the one with the child and mother at the store buying the advertised products). Children therefore performed less well in this study compared to children in Donohue et al, because only the 8-year-olds were better than chance, and this might have been because in the Ballard-Campbell study products were presented clearly in every picture. When the children were asked to explain the purpose of advertisements less than a tenth of the 4-year-olds, a fifth of the 6-year-olds and three-quarters of the 8-year-olds demonstrated an awareness of persuasive intent. The latter results are only slightly poorer than their performance on the picture task. Therefore Ballard-Campbell demonstrated that, in a better controlled task, children did not perform any differently in a non-verbal task than in a verbal task. However, the Ballard-Campbell study was part of a thesis and perhaps because it was not published, it has virtually never been cited in the debate about young children's awareness of advertising.

In a later study Bijmolt, Claassen, and Brus (1998) used a similar technique as Donohue et al. (1980). They presented children between the ages of 5 and 8 years with a television advertisement showing a chocolate drink, and then asked the children to choose between three pictures (a mother and a child buying the chocolate drink, the chocolate drink displayed on some shelves, and two children watching the chocolate drink commercial on TV) to show what the character in the advertisement want them to do. Bijmolt et al. found that 69% of children chose one of two correct pictures (the mother and child making the purchase and the chocolate drink displayed on the shelves). Bijmolt et al. concluded that children understand the relationship between shopping and advertisements. However, this conclusion cannot be derived from their findings because the chance of choosing either of 2 pictures from 3 is 67% and therefore children's performance was no better than chance.

In a recent study, Owen, Auty, Lewis and Berridge (2007) combined verbal and non-verbal techniques to explore children's understanding of advertising intent. They asked 7-year-olds about advertising using open-ended questions from Oates et al. (2003). Children then were presented with four cartoon pictures (a child walking away from a television, a child laughing at an

advertisement on the television, a child watching the advertisement and saying (in a speech bubble) that there is a new chocolate bar, and a child watching television while shaking a piggy bank to get some money and saying (in a speech bubble) that he wanted to buy the product. The participants were asked to point to any pictures on what does the advertisement want them to do. Owen et al found that 60% of the 7-year-olds pointed to the picture of the child with the piggy bank. Owen et al interpreted pointing to the piggy bank picture as an indication that children understood that advertisements wanted them to buy something (i.e. an awareness of persuasive intent). The children were also asked verbal questions about advertising and in response to these questions only 19% of the 7-year-olds gave answers indicating that they were aware of the persuasive nature of advertising. Hence, Owen et al concluded that children's performance on the verbal task underestimated their understanding because the same children performed better on the non-verbal picture task. However, in Owen et al's study children were allowed to point to as many pictures as they liked. From the information about the total number of points in Owen et al, it seems that, on average, children pointed to about 2 pictures. If so, the performance of the 7-year-olds was not much better than chance (50%) in the picture task, and therefore it is difficult to interpret this result as evidence for the 7-year-olds understanding persuasive intent.

In summary, although the earliest study using non-verbal methods (Donohue et al., 1980) showed that very young children could make an association between a television advertisement and a shopping picture, the high levels of performance in that study was not always replicated in later studies. In any case, all the studies were limited because none of the researchers included a control group of children who were asked to point to the pictures *without* being asked about advertisements. Such a control group is important to make sure that children do not pick the picture depicting persuasive intent simply because it is the most attractive picture in the set.

Children's understanding of persuasive intent has therefore been investigated for some time, but there is still much debate about when children

actually understand the persuasive intent of advertisements and the appropriate methods to use to find out about children's understanding (e.g. Owen et al., 2007). In particular, several researchers have stressed the relevance of non-verbal methods to find out about persuasive intent. Therefore in chapters 3-7 we investigate the use of non-verbal methods.

1.4 Internet advertising

Almost all the research on the effects of children's understanding of advertising is based on television advertising. Therefore, there is a gap in literature for understanding about Internet advertising aimed at children (Neeley, 2007). The Internet is growing rapidly globally, with Internet users totalling 165 million in the U.S and 137 million in Chinas (Fallows, 2007), and it is changing the way people carry out their daily lives - i.e. communicating with other people, getting news, entertainment or information (Thorson, Duffy and Schumann, 2007). Research on the Internet is mostly conducted by looking at adults' time of usage (Pew Internet & American Project, 2004) and by investigating adults' attitude toward the Internet usage (Rodgers, Cannon & Moore, 2007). For example, Pew Internet and American Project (2004) distributed questionnaires to college students and found three-quarters of them used the Internet for 4 or more hours per week, and 20% used it for more than 12 hours per week. Rodgers et al. (2007) also found that although 20% female and 15% male did not like to use the Internet, a third of male and female participants were passionate users.

The growth of the Internet also affects the number of children who are Internet users. Childwise (2008) reported that 75% of primary school children and 95% of secondary school children were using Internet. The Internet has become part of children's life. For example, Pew Internet and American Project (2004) surveyed 12- to 17-year-olds about their Internet activity and found 89% used email, 81% played online game, 75% used instant message, 76% looked for information about current events, and 55% looked for news. Furthermore, Chan and Fang (2007) surveyed 15- to 24-year-olds in Hong Kong on their Internet usage and found 30% of them spent at least 3 hours per day on Internet. 98% of the participants used Internet for information and 96% for homework and 38% for

entertaining, 38% for leisure, 27% for shopping and 18% of them are for looking new/current events (Chan & Fang, 2007). These high pecentages suggest that most, if not all, children are frequent Internet users.

As people are spending more time on the Internet now, marketers/advertisers see this as an opportunity to promote their products by placing advertisements on the Internet and Internet advertisement revenue reaches was $5.9 billion in 2008, an 11% increase from 2007 (Internet Advertising Bureau, 2008). When Fielder, Gardner, Nairn and Pitt (2007) reviewed the 40 Web pages that were most often visited bychildren, they found that 95% of the Web pages had advertisements on them.

Internet advertisements share some of the same characteristic as the traditional advertisements (i.e. printed and television advertisement) in shape, colours, and sizes however the time of exposures are very different. For example, television advertisements may last for about 10 seconds to 30 seconds but Internet advertisements last as long as the users are on the Web page (McMillan, 2007).

McMillan (2007) pointed out that Internet advertising provides a two-way communication between the marketers and consumers, uses one-on-one marketing strategies (i.e. building personal relationship between the consumer and marketers) and is less disruptive than traditional advertising. For example, television advertisements are usually aired in or between of the programmes, which often disturb the flow to the programmes, but the Internet advertisements are often an integral part of the content of the Web page (McDonald, 1997). McMillan added that in traditional advertising there is hierarchy of effects (i.e. awareness, product loyalty and purchase) while the hierarchy of effects on Internet are blurred. Internet advertising only creates awareness of products and it requires the user to click on the advertisements before the other effects can follow.

There are different types and functions of Internet advertising (i.e. banners, spam, pop-ups and advergaming). Banners, as in other media (i.e. magazine and newspapers), appear at the top or around the content and are used to inform the

consumer about products and services. It is one of the most effective and famous advertisements technique used by advertisers (Li & Leckenby, 2007). For example, Li and Bukovac (1999) investigated the recall types of banners (static and animated) and found animated banners are the most easily recalled by undergraduate students.

Pop-ups advertisement are used to aid direct interaction between the consumer and the marketers (McMillan, 2007) even though pop-ups advertisement do not always work and most adults are annoyed by them (McMillan, 2007). Andersen, Tufte, Rasmussen and Chan (2008) distributed a questionnaire to fourth, fifth and six graders in Denmark and Hong Kong on their attitude towards pop-ups advertisement and found that children from both the countries felt that pop-up advertisements are annoying. A fifth of children in Hong Kong opened pop-up commercials compared to only 1% of children in Denmark.

Another type of advertisements on the Internet is advergaming, which is a technique for promoting a product through a game (Moore, 2006). More companies are targeting children by introducing their product through advergaming (Stoughton, 2005). For example Weber, Story, and Harnack (2006) analyzed 40 Web pages and found two thirds included advergaming. Hernandez (2008) investigated factors in contributing positive attitude towards advergaming in 9-, 10-, and 11-year-olds in Mexico by asking them to play advergames (3D Dune Derby, X-treme Ping-Pong and Sumo Wrestling) and then to fill in a questionnaire about their experience. Hernandez found factors such as entertainment and sociability determined children's positive attitude towards advergaming.

Food is one of the products advertised to children on the Web pages. Weber et al (2006) analyzed forty food (i.e. fast food, cereals, cookies, crackers, salted snack and candy) and drink (i.e. soft drink and other beverages) supermarket brands aimed at children and adolescents and found that 37 out of the 40 brands had their own Web pages.

Some of the effects on television advertisements aimed at children also applied to Internet advertisements. Mallinckrodt and Mizerki (2007) investigated the effect of advergaming on 5- to 8-year-olds' perceptions, preferences and requests. Children were assigned into a group and asked to play a Froot Loops cereal advergame. They found that children did not believe that Froot Loops are healtier than fruits and that playing advergaming did not result in the children requesting the particular products. However, they found that children prefered Froot Loops rather than other cereals that were included in a set of options

Researchers have found that the more hours children spend on the Internet, the more likely they are to develop materialistic behaviour. For example, Nairn, Ormrod and Bottomley (2007) asked the 9- to 13-year-olds to fill in a questionnaire about their use of the Internet and the feelings of wanting. Nairn et al. found that a third of the children used the Internet at home and there was a correlation between time spent on Internet and materialism. Children who spent more hours on the Internet had a higher belief in materialism (Nairn, Ormrod & Bottomley, 2007). Apart from these surveys of children's Internet use there has been no research into children's understanding of what they see on a Web page. Therefore, we investigated children's understanding in relation to their recognition of advertisements in Chapter 8.

1.5 Children from non-Western countries

Nearly all the research into children and advertising has been conducted in Western countries, in particular in the US. With a few exceptions (e.g. Chan & McNeal, 2004) there have been few studies in other countries, and there have been very few cross-cultural studies in which children from two countries have been tested in the same experiment.

For this thesis we carried out most of our studies in the UK, but we also replicated two experiments with samples of children from Indonesia. As far as we know these were the first studies to examine advertising understanding in Indonesia. In one study (chapter 5) we looked at the issues raised in section 1.3.2,

about children's understanding of persuasive intent. As we have discussed in that section persuasive intent is related to children's age and cognitive development and therefore we did not expect major differences regarding when children in the UK and in Indonesia achieved an awareness of persuasive intent.

In another study in Indonesia (chapter 10) we followed up the issues discussed in section 1.3.1 about children's ability to distinguish between advertisements and non-advertisements. Rather than investigate television advertising, we investigated children's ability to identify advertisements on Web pages. In the case of this study, we thought that there might be cultural differences, because the children we tested in Indonesia had far less experience of using the Internet than children in the UK.

To provide some background to the studies in Indonesia, the next chapter briefly describes the media environment in Indonesia. The chapter includes a content analysis of the advertising experienced by children in Indonesia, as well as a survey of Indonesian parents' attitudes to advertising.

CHAPTER 2

2. Chapter overview

Several of the studies reported in the following chapters were carried out in Indonesia, with a sample of Indonesian children. To provide a background for these studies we will present a brief history of advertising industries, regulations in Indonesia. We will then explore the advertisement regulations for children in Indonesia and make a comparison with the regulations in the UK.

Nearly all the research on the television content has been conducted in Western countries and no research has ever been done in Indonesia regarding the content of television advertising. Therefore, we carried out a content analysis of 5 Indonesian television channels. We will describe the types of products that were shown to children and briefly discuss the type of advertising techniques used in Indonesian advertisements, to illustrate the nature of advertisements aimed at children on Indonesian television

The next section will look at parents' attitudes towards advertisements in Indonesia. Here we surveyed 162 parents in Jakarta regarding their thoughts and beliefs about advertisements in general and also ones aimed at children. The data from the questionnaire then were compared to the data from UK. (Dr. Brian Young kindly provided the UK data).

2.1 An Introduction to Indonesia

Two of the experiments in this thesis were carried out with children from both the UK and from Indonesia. Indonesian children were included to find out if the results from research in the UK generalised to another sample; in other words, to establish that any UK findings were not just specific to one country or culture. There have not been any previous studies of Indonesian children's understanding of advertisements. This chapter provides some background to the research in Indonesia. It is divided into three parts. First, it will describe a brief history of

advertising and advertising regulation in Indonesia. Second there is a content analysis of advertisements aimed at children in Indonesia and third, there is a survey of Indonesian parents' attitudes towards advertising.

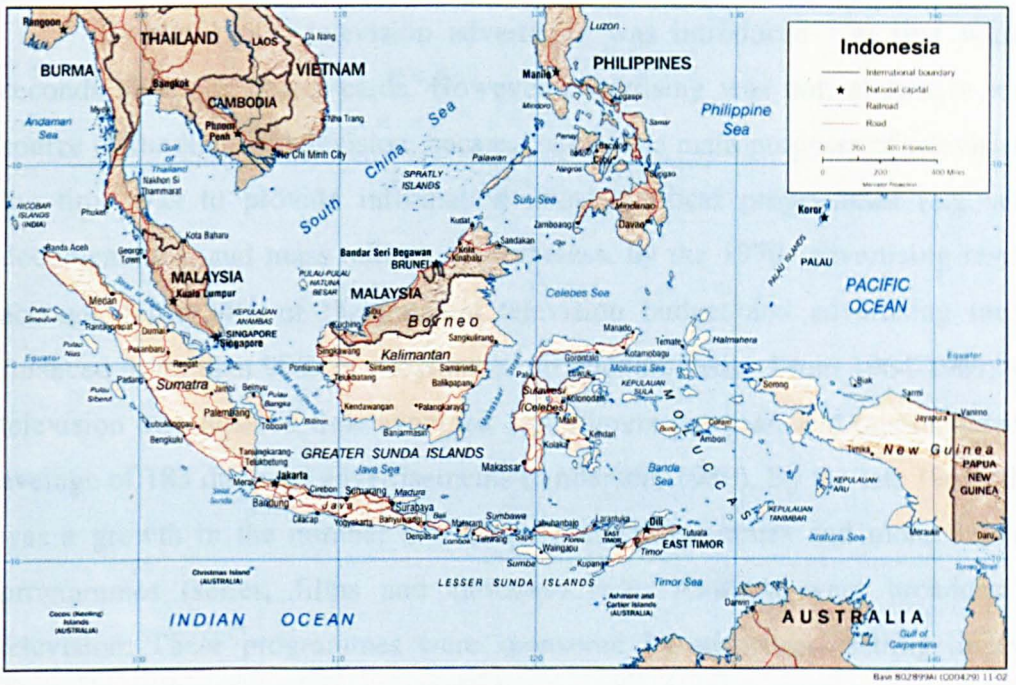

Figure 2.1 Map of Indonesia.

2.2 Brief history of advertising and advertising regulation in Indonesia

Newspapers have played an important role as a medium for advertising in Indonesia, for both local and foreign advertisers (Anderson, 1980). At the beginning of the 19th century, during the period of the Dutch colonization of Indonesia, the Dutch East Indies government allowed private businesses to publish newspapers, and these newspapers included advertisements (PPPI, 2008). Both the Portuguese and the Dutch colonized Indonesia before its independence in 1945 and these countries introduced modern advertising (i.e. as western defined) to Indonesia to serve the growing business community. For example, in 1938, Unilever, the world's largest consumer goods business, established a company in Indonesia, and began advertising campaigns for household goods such as margarine and soap (Anderson, 1980). In 1966 the government allowed

experimental advertising on the Radio Republik Indonesia (RRI). The government then also permitted other radio stations to broadcast advertisements so that by 1977 there were 347 commercial stations that relied on advertising for their income (Anderson, 1980).

By the 1960s, television advertising was introduced - at first with 10 seconds slides or poster cards. However advertising was not, at first, a major source of funding for television, because one of the main purposes of television at the time was to provide information about political programmes (e.g. about documentaries, and mass rallies). Nonetheless, by the 1970s advertising revenue accounted for 34% of the national television budget and advertising income financed more than 90% of programme production costs. From 1964-1967, total television transmission time averaged 1,183 hours per year, and this included an average of 183 different advertisements (Anderson, 1980). By the late 1960s there was a growth in the number of entertainment programmes and more imported programmes (series, films and cartoons) from America were broadcast on television. These programmes were sponsored by advertisers selling imported products. In 1976, only 23% of advertisements that were shown on television were for local products while 73% of them were for imported products (10.5%) or joint venture products (62.5%) such as Cola-Cola (Anderson, 1980).

With the development of advertising in the 1970s, the government established the Persatuan Perusahaan Periklanan Indonesia (PPPI) – the Indonesian Advertising Agency Association, which was used to control the advertising industries (PPPI, 2008). Most advertisements were generated by foreign advertisers and this caused tension with the national advertising companies because national companies wanted more of a share in the advertising business. In addition, there was government concern about advertising that showed a luxury style of living. Advertising reaches all members of the public, from the rich to the poor; and to avoid the risk of antagonizing the less well off, the government banned television advertisements that exhibited luxury lifestyles (PPPI, 2008). In 1977 foreign companies were asked to terminate their domestic

trade and service activities, and this opened up opportunities for more national advertising (Anderson, 1980).

Media regulation is controlled by Departemen Komunikasi dan Informatika Republik Indonesia (Ministry of Communication and Information Technology of Republic of Indonesia). The advertising regulations in Indonesia (Departemen Komunikasi dan Informatika Republik Indonesia, 1997) cover all advertisements and are not specific to children (Sugiantoro, 2005). The regulations state that advertisements in general should not mislead the viewer regarding the quality, quantity, content, origin and measurement of the products. The majority religion in Indonesia is Islam, and therefore alcohol and other addictive substances are prohibited in advertisements. However, cigarette advertisements are allowed if the advertisement does not show tobacco products being used. There is only one regulation related to children, and this states that advertisements for children should follow the standard of the content of children's television programmes.

In 2002, the Committee of the Broadcasting Association (KPI) was formed to control and manage advertisements. The KPI has responsibility for standardizing programmes, arranging regulation, deciding the direction of broadcasting, supervising the implementation of regulation and penalizing any violations of the regulations. Although the regulations were revised in 2002 there were few changes, and no specific regulations for children were introduced beyond a statement that advertisers should not exploit young people under the age of 18 years. Therefore, compared to many other countries (Chan & McNeal, 2004; Gunter et al., 2005) Indonesia has little specific regulation about advertising to children. In the UK the regulations about television advertisements, which are targeted at children are well established (see page 231 – Appendix 3). But there have been recent changes because in 2007, OFCOM banned unhealthy food and drink (i.e., products that were high in fat, salt and sugar) during children's programmes (OFCOM, 2007). In contrast, in Indonesia unhealthy food and drinks advertisements (i.e. crisps, candy and chocolate) are allowed.

Advertisements for children in the UK cannot put pressure on children to request their parents or other adults to buy products or put pressure on their peers or imply that products will make them superior to others In contrast such advertising is allowed in Indonesia. The 'Aliph' (shoes) advertisement, for example, shows two boys walking to school who accidentally step in a pool of water. One boy's shoes and socks are wet while the other boy is not affected and he tells his friend that he should buy and wear 'Aliph' shoes.

Advertisements in UK are prohibited from encouraging bullying or show scenes of bullying in advertisements but in Indonesia some advertisements show bullying (e.g. in candy and milk advertisements). A 'Jagoan Neon' (candy) advertisement starts with three boys are surrounding a girl and pushing her around until she cries. Another boy sees the girl is being bullied, then he eats the candy and becomes a superhero and rescues the girl.

These examples demonstrated that compared to the UK, Indonesia has less regulation about advertisements aimed at children. The lack of specific, or stricter, guidelines about advertising to children in Indonesia has become a matter of concern to teachers and parents (Sugiantoro, 2005), but such concerns have not resulted in any new regulations.

2.3 Content analysis of advertising to children in Indonesia

Content analyses have been used to assess the number and type of advertisements aimed at children (Roberts & Pettigrew, 2007). For example, Lewis and Hill (1998) videotaped one week of children's television from four commercial stations broadcasting in the UK. 828 advertisements were broadcast for a total of 91.33 hours during children's peak viewing time. Lewis and Hill found that food was the most advertised product, particularly cereals, confectionery, and savoury snacks. Animation, a story format, humour and emotional appeal of fun/happiness/mood were the most commonly used techniques in food advertisements.

Similar findings have been reported from other countries. In the US Byrd-Bredbenner (2002) recorded a total of 11.5 and 9.5 hours of top-ranked Saturday morning children's network programmes in 1993 and 1999 in the US. Byrd-Bredbenner found that there were 378 and 385 commercials in 1993 and 1994, with food being the largest category of advertisements shown. Bread and breakfast cereals (40%) were the most advertised food products in 1993, while sweets (53%) were advertised more in 1999. Byrd-Bredbenner compared these results with Barcus (1971) and noted that there was an increase in food advertisements between 1971 and 1999, but the number of advertisements for toys and games remained relatively steady in this period. In Australia, Roberts and Pettigrew (2007) analysed 28.5 hours of children's television programs, and found 950 advertisements, of which 212 advertisements were for food products.

To analyse the style of advertising aimed at children, Furnham, Abramsky, and Gunter (1997) recorded children's programmes from two commercial television stations in US over two consecutive weekends and one television station in UK (ITV). There were, in total, 82 different advertisements aimed at children. Of these Furnham et al. used 67 advertisements from both of the countries to compare the content of UK and US advertisements for the central figure, voice over, music, credibility and end comments. They found similarities in both of the countries. In US and UK a male (52% in US, 28% in UK) was the key person/central figure in the advertisements rather than female (US = 40%, UK = 21%) and a male voice was usually used for a voiceover (55% in US, 60% in UK). Music was present in majority of the advertisements (88% in US, 81% in UK). The presence of a brief remark at the end of the advertisements such as slogan or sales pitch appeared in most of the advertisements in both countries (97% in US, 96% in UK).

There has not been any content analysis research looking at advertisements that are aimed at children in Indonesia. Television in Indonesia is different from the UK and many other countries. In the UK, children have separate channels such as Cbeebies (for preschool children), CITV and CBBC. Some of these channels do not have advertisements. In Indonesia, there are no channels especially for

children. Children's programmes are usually aired on Sunday morning because it is the only day that children are not at school. Children in Indonesia start school at 07:00 in the morning and may have little time to watch television during weekday mornings. In the evening, children may be doing homework and studying for examinations that begin for children at 5 years of age. Children usually watch RCTI and INDOSIAR on Sunday morning because both these channels air cartoons while other channels show foreign family movies. Television channels in Indonesia are designed mainly for adult audiences in particular for a female audience because most mothers stay at home with their children. Most of the programmes are soap operas, from Indonesia or other countries, infotainment and games. When mothers are watching television, their child will often be watching with them.

2.3.1 Procedure

Five channels from private television were chosen from nine channels in Indonesia because they are the most watched television channels in Indonesia, and include children's programmes and soap operas. These five channels were RCTI, TPI, SCTV, TRANS TV and INDOSIAR. RCTI was the first private channel in Indonesia, which was based in Jakarta. Before RCTI was established, Indonesia had only public television that was owned by the government, TVRI. It was not until 1989 that RCTI was aired but people had to subscribe to it in order to watch it. RCTI was made available to all viewers in 1990. Other private channels (including SCTV, TPI, ANTV, INDOSIAR, Metro TV, TRANS TV, LATIVI, Global TV, and TV7) followed afterward (Surya, 2006).

A total of 75 hours of television programmes on Sunday were recorded from the five channels using a DVD recorder. The recording was carried out during the summer of 2005 (July - August) in Indonesia. The times that were recorded were morning (06:00 to 11:00), midday (12:00 to 17:00) and evening (18:00 to 23:00). The recording was designed to provide a large sample from the most popular channels in Indonesia, with the intention of analysing all the advertisements (for children or adults) that children might see. In this section, for

brevity, we will focus on the advertisements that were specifically aimed at children. At the time of the recording only the two private channels, RCTI and INDOSIAR, had children's programmes. Most of these children's programmes were shown on a Sunday between 06:00 to 11:00.

2.3.2 Results

The 75 hours of recorded television programmes included 253 advertisements aimed at children (see table 2.1). There were 57 different advertisements that included 45 for food products and 12 for non-food products. Most of the food products were for unhealthy items such as candy, biscuits and ice cream.

Categories	Percentages without repetition (n = 57)	Percentage including repetition (n = 253)
Dairy products	21 %	25 %
Confectionery	19 %	7 %
Cakes and biscuit	16 %	15 %
Savoury snacks	12 %	16 %
Toiletries	11 %	13 %
Shoes	9 %	14 %
Hot/cold beverages	7 %	6 %
Breakfast cereals	3 %	3 %
Toys	2 %	1 %

Table 2.1. Percentage of each category of advertisements.

Dairy products were the most common advertisements, repeated 64 times. There were 12 different kinds of dairy products, which included milk (e.g. Sustagen, Milkuit Susu and Ultramilk), chocolate milk (e.g. Fristi, Booneto, Milo), orange flavoured milk (e.g. Mr Jusie and Wam) and ice cream (e.g. Walls, Paddle Pop Galactica, Milkita Ice and Campina). Advertisements for savoury snacks were repeated 41 times, and ones for cakes and biscuits were repeated 37

times. Savoury snacks included Minimi, Lays, Taro, Gemes, Sozzis, French Fries, Chiki and Cheetos. While biscuits included Miniritz, Biskuat, Milkuit, Belvita, Oreo, Tango, Biscuit Coco, Biskuat Energy and Hello Panda. Confectionery advertisements were repeated 17 times. Altogether there were 11 different confectionery advertisements, which included candy (e.g. Starburst, Milkuit Lollipop, Jagoan Neon, Split, Fruitella Candy and Fuitella Lollipop) and chocolate (e.g. Gorilla, Chox, Cannon Ball and Mio chocolate). Six different toiletries (Doremi, Eskulin, B&B Kids, Lifebouy Sabun, Lifebouy Shampoo and Komodo) were shown 33 times.

The average length of the advertisements was 20.8 seconds (s.d. 6.02). The shortest was 14 seconds long and the longest was 44 seconds. More then one third of advertisements used animation or a combination of animation and human (39%). More than half the advertisements used play situations or activities (53%) and 8% used fantasy or adventure as themes. The majority of advertisements used a male voice over (85%), and 4% used a female voice over and 11% used a child voice over. All the advertisements included music and/or a jingle.

Table 2.2 shows the categories of advertisements on each channel. Most channels showed a similar variety of advertisements, but RCTI showed 5 different children's shoes advertisements (New Era, Aliph, Starmon, Homyped, and Carvil) with a total of 37 repetitions. There was only one toy advertisement (for a Batman action figure), which appeared only once, on RCTI.

CATEGORIES	TRANS TV		TPI		SCTV		RCTI		INDOSIAR	
	Including repetitions	Excluding repetitions	Including repetitions	Excluding repetitions	Including repetitions	Excluding repetitions	Including repetitions	Excluding repetitions	Including repetitions	Excluding repetitions
DAIRY PRODUCTS	10	3	6	3	9	7	31	7	8	5
SAVOURY SNACKS	6	2	1	1	13	4	21	4		
SHOES							37	5		
CAKES AND BISCUITS	7	4	9	3	7	4	11	3	3	3
TOILETRIES	6	2	11	2	1	1	11	4	4	2
CONFECTIONERY			1	1	4	2	12	8		
HOT/COLD BEVERAGES							12	3	3	1
BREAKFAST CEREALS			7	2			1	1		
TOYS							1	1		
TOTAL	29	11	35	12	34	18	137	36	18	11

Table 2.2. Numbers and types of advertisements.

2.3.3 Discussion

The content analysis found that foods were the most advertised products. This finding was similar to others in Western countries (Lewis & Hill 1998; Byrd-Bredbenner, 2002; Hastings, Stead, McDermott, Forsyth, MacKintosh, Rayner, Godfrey, Caraher, & Angus, 2003; Roberts and Pettigrew, 2007). Dairy products such as milk and ice cream were the most advertised type of product (excluding repetition). As in the West, most of the food advertisements were for unhealthy food or drinks. As in Furnham et al. (1997) male voice-overs were used in most of the Indonesian advertisements. The findings in Indonesia were also similar to Lewis and Hill (1998), who found that most advertisements used animation, and a story format, with humour and a mood of fun and happiness to attract children.

In contrast to Western advertising (Lewis & Hill, 1998), toy advertisements were rare in Indonesia. In fact there was only a single toy advertisement in the sample. In the West toy advertisements are more frequent at Christmas (Pine & Nash, 2002), but in Indonesia, there are no special occasions for giving toys. Also in contrast to the West, parents in Indonesia may be more likely to give traditional toys, and usually advertisers are not interested in advertising such toys. Traditional toys are usually cheaper and more affordable than Western toys. Also in contrast to Western advertising, there were a large number of shoe advertisements (on one channel, RCTI). This may have been because this particular channel was recorded in July 2005 when children were preparing to go back to school, and most of the advertised shoes were for the sort of shoes worn in school (rather than for fashion).

In addition to the advertisements noted above, children also see other advertising. These include advertising aimed at parents for products such as children's milk, vitamin, and medicine (e.g. cough and fever medicine) and ones aimed at families such as fast foods (e.g. KFC and McDonald) and restaurants (e.g. Pizza Hut). However, as noted at the start of this section we focused our analysis on advertisements that were specifically aimed at children. In the next section we describe a survey of Indonesian parents' attitudes (based on Young, de

Bruin, & Eagle, 2003) to find out what parents thought about advertising to children.

2.4 Indonesian parents' attitudes to advertising

Most of the research looking at attitudes towards advertising has been done in the US (Young et al., 2003) In general attitudes toward advertisements are negative; and many people consider advertisements to be misleading. For example, Rose, Bush, and Kahle (1998) looked at family communication and attitudes towards advertising by distributing questionnaires to mothers of children between 3 and 8 years of age in Japan and the US. Mothers were asked what they thought about advertisements that were directed to children, especially about advertisements for unhealthy products, and also about the effects of advertisements on the family. Rose et al found that American mothers showed more negative attitudes toward advertising in general and towards children's advertising in particular than did Japanese mothers. American mothers also controlled more of what their children watched and were more likely to discuss advertisements with their children than Japanese mothers.

Using a questionnaire based on Rose et al. (1998), Chan and McNeal (2003) looked at parents' attitude towards children's advertising in China by distributing questionnaires in three large cities. Chan and McNeal found that in general parents in China had a negative attitude towards advertising to children. Parents in China did not believe advertisements, which they perceived as annoying. Parents were particularly concerned about the effect of food advertisements to children and felt an obligation to protect their children not only from food advertisements, but also any misleading advertisements. In general the Chinese parents thought that advertisements during children's programmes should be banned.

Young, De Bruin, and Eagle (2003) looked at parents' attitudes toward advertising in New Zealand, UK and Sweden. In New Zealand a 12 item questionnaire regarding the impact of advertisements on children and families

were given to parents of children aged 5-12 years. In contrast to the studies described above, Young et al. found that parents in New Zealand had a neutral opinion regarding the influence of food advertisements on their children's unhealthy eating. Parents thought that advertisements were causing their children to request products that they did not need, but that this did not cause conflict within the family. Parents thought that there were too many advertisements in children's programmes and that their children were unlikely to understand the persuasive nature of those advertisements.

In the UK and Sweden, Young et al. (2003) distributed a 34-item questionnaire to parents or grandparents. They collected 172 questionnaires in UK and 371 in Sweden. They found similarities between parents in UK and Sweden; who generally agreed that the more advertising that children watch the more likely they would be to pester their parents to buy products that they do not need. They also thought that children are deceived by advertisements easily, and that products that were advertised on TV were not always the best products to buy. Like parents in New Zealand, parents in the UK and Sweden thought that children were exposed to too many advertisements. Both parents in the UK and Sweden strongly disapproved of advertisements directed to children and they wanted stronger regulation on advertising to children.

Previous researchers have therefore shown that parents usually have negative attitudes toward advertisements aimed at children and felt that it was their responsibility to protect their children from the effects of advertising. We note that the countries where previous research has been carried out usually have stricter regulations than Indonesia. If, despite the stricter regulations in other countries, parents in other countries have a negative attitude to advertising we expected parents in Indonesia to have a similar, or even stronger, negative attitude towards advertising that is aimed at children.

2.4.1 Participants

One hundred and sixty Indonesian adults who were all parents completed a questionnaire. Ages ranged from 20 to 51 years of age (the mean age was 35 years and 6 months). The sample included parents from all social classes.

Dr Brian Young kindly provided the data from his study of 172 UK adults with age range from mid-20s to 70s (Young et al., 2003) and this data was used for comparative purposes.

2.4.2 Procedure

The questionnaires used in the study were designed by Young et al. (2003). There were 34 questions. The questions on the questionnaire were constructed based on 22 focus group interviews with parents, children and grandparents in the UK and Sweden. Young et al's questionnaire was translated from English to Bahasa Indonesia by the experimenter, and a second person who was fluent both in Bahasa Indonesia and English translated it back into English to make sure that the translated questionnaire was accurate.

Responses were on a five point Likert scale ranging from 1: "strongly disagree" to 5: "strongly agree". The questionnaires were distributed in schools, offices and factories in Indonesia in 2006. The participants were asked to fill in the questionnaire and return it to their head teacher or supervisor, or directly to the experimenter.

2.4.3 Results

The data from the UK was from Young et al. (2003), while the experimenter collected the data from Indonesia. The mean and standard deviation from each of the countries were calculated for each question, and by using independent t-tests we compared parents' attitudes between both countries (see table 2.3).

Parents in Indonesia had more favourable opinions about advertising in general than did parents in the UK. For example, they thought that advertisements were informative, and kept them up to date about products, particularly about food products. Indonesian parents were also more likely to think that advertisements promoted competition, which, in turn benefited the consumer.

On a few issues relating to children, parents in the UK and in Indonesia had similar opinions. For example, they believed that children under the age of 5 years did not understand the persuasive intent of advertisements and believed that young children thought that advertisements were usually true. Parents in both countries believed that advertising to children under 12 years of age should be banned. They also believed that children's eating habits would improve if unhealthy food advertisements were banned. Parents in both countries agreed that advertisements help children become more aware of the world around them.

However, on many questions about children the parents in Indonesia and the UK had significantly different opinions – usually the Indonesian parents had more extreme views (i.e. towards either end of the rating scale) than the UK parents. In summarizing the main differences below, we will focus on the differences with higher levels of significance.

For many responses parents in Indonesia had more negative views than parents in the UK. Indonesian parents felt that children pressured them to buy the products that were shown in advertisements (mean = 3.75) more than did parents in the UK (mean = 1.45, $t = 23.85$, df = 328, $p < .001$), and Indonesian parents reported that children were more likely to want foods that were shown in advertisements (mean = 3.86, compared to UK mean = 2.28, $t = 14.99$, df = 325, $p < .001$). Parents in Indonesia were more likely to think that junk food advertisements should be banned (mean = 3.55, compared to UK mean = 2.24, $t = 10.24$, df = 326, $p < .001$), and in particular, parents in Indonesia had stronger opinions that there should be health warnings on advertisements for sugared products (mean = 4.00) than did parents in the UK (mean = 1.88, $t = 20.49$, df = 323, $p < .001$). These findings demonstrated that Indonesian parents were more concerned than UK parents about the effects of food advertising on children.

Parents in Indonesia thought that children were exposed to too many advertisements (mean = 3.96; UK mean =1.82, $t = 21.05$, df = 325, $p < .001$), that advertisements deceive children (mean = 3.13; UK mean = 2.32 $t = 7.33$, df = 323, $p < .001$) and they felt more responsible for deciding what advertisements their children should watch (mean = 3.99; UK mean = 2.08, $t = 16.34$, df = 323, $p < .001$). Indonesian parents were also less likely to think that watching more advertisements would help children understand advertisements better (mean = 3.05, compared to UK mean = 3.81, $t = 2.24$, df = 324, $p < .05$).

	Questions	UK (Data from Young et al., 2003)		INDONESIA		P VALUE
		MEAN	SD	MEAN	SD	
1.	Advertising is a valuable source of information for consumers	2.36	.97	4.22	0.72	<. 001
2.	Food advertising is the main influence on children's diets	2.66	1.10	2.94	1.16	<. 05
3.	Most children older than 5 years understand the purpose of advertising	2.90	1.17	2.89	1.10	>.05
4.	Advertising makes children put pressure on their parents to buy them things	1.45	0.64	3.75	1.07	<. 001
5.	There should be a ban on advertising heavily sugared products aimed at children	1.77	0.94	3.76	1.14	<. 001
6.	Food advertising leads to bad eating habits in adults	2.61	1.07	2.74	1.07	>.05
7.	The more advertising children watch, the more they will want products advertised	1.69	0.78	3.96	0.93	<. 001
8.	Children are deceived by adverts more easily than adults	1.83	0.96	4.11	0.92	<. 001
9.	Advertising healthy products leads to good eating habits	2.46	0.87	3.69	0.98	<. 001
10.	Advertising is generally misleading	2.52	0.97	2.48	0.98	>.05
11.	Advertising promotes competition	2.21	0.83	4.24	0.75	<. 001
12.	Competition benefits the consumer	2.48	1.05	3.74	1.04	<. 001
13.	In general, adverts are more informative	3.12	1.03	3.98	0.83	<. 001
14.	The more advertising children watch, the better they will understand them	3.81	4.18	3.05	1.08	<. 05
15.	Adverts aimed at children under age of 12 should be banned	2.60	1.15	2.73	1.03	>.05
16.	Most advertising is entertaining	3.23	1.12	2.93	1.05	<. 05
17.	The products advertised the most on TV are the best products to buy	4.28	0.84	2.49	0.93	<. 001
18.	If unhealthy food were not advertised children's eating habits would improve	2.90	2.54	3.06	1.03	>.05
19.	Most advertising insults the intelligence of the average consumer	2.44	1.10	2.83	1.04	<. 01
20.	Advertising aimed at children who are too young to understand the purpose of advertising should be banned	2.16	1.10	3.35	1.09	<. 001
21.	In general, advertising presents a true picture of the product advertised	3.88	2.39	3.11	1.14	<. 001

22.	Children are exposed to too much TV advertising	1.82	0.95	3.96	0.87	<. 001
23.	Children usually demand food they have seen in TV adverts	2.28	1.02	3.86	0.88	<. 001
24.	Advertising helps children become more aware of the world around them	3.21	0.97	3.34	1.00	>.05
25.	Food advertising helps improve public knowledge of food	3.17	1.01	3.84	0.78	<. 001
26.	The best way of bringing up children is to expose them to the adult world from an early age	4.12	4.22	2.32	1.07	<. 001
27.	Advertising keeps me up to date with new brands	2.70	1.03	3.27	1.06	<. 001
28.	Junk food advertising should be banned completely	2.24	1.17	3.55	1.14	<. 001
29.	Parents have the overall responsibility for deciding what adverts their children should watch	2.08	1.16	3.99	0.93	<. 001
30.	Most adverts deceive children	2.32	0.95	3.13	1.04	<. 001
31.	There should be health warnings on advertisements for sugared products	1.88	0.96	4.00	0.90	<. 001
32.	Advertising persuades people to buy products they do not really need	1.96	0.94	3.88	0.90	<. 001
33.	When children decide what to buy, they are influenced more by their friends than by advertising	2.16	0.93	3.39	0.98	<. 001
34.	Most TV adverts are annoying	2.25	1.04	2.74	1.15	<. 001

Table 2.3. Parents' attitudes towards statements about advertising to children in Indonesia and the UK.

2.4.4 Discussion

Overall, parents in Indonesia had more negative attitudes towards advertisements aimed at children than did parents in the UK. Parents in Indonesia were more critical about advertising, and wanted to ban or restrict advertising, especially food advertisements aimed at children. There are two possible reasons for this finding. First it could be the case that parents in Indonesia simply hold stronger views on such issues, perhaps because of having more conservative cultural and religious values than parents in the UK. Second, it may reflect the fact that at the time of the survey the UK already had extensive guidelines about advertising to children (Gunter et al., 2005). In contrast, and as pointed out in the first section of this chapter, there are very few specific guidelines about advertising to children in Indonesia, and this may account for the Indonesian parents' stronger views about the need for greater regulation. However, more research would be needed to identify the precise factors behind the attitudes of the Indonesian parents.

Parents in Indonesia expressed greater sense of responsibility for protecting their children from the effects of advertising than did parents in the UK. This could be because the lack of specific regulations about advertising to children in Indonesia means that parents feel obliged to take on the role of monitoring what children watch on television. However, parents in other countries have also said that they feel responsible for what their children watch, for example in Japan and the US (Rose et al., 1998) in China (Chan & McNeal, 2003), and in Sweden and New Zealand (Young et al., 2003). All of these other countries do have extensive regulations about the type of advertising that can be shown to children, so it is unlikely that the lack of regulation in Indonesia is the sole reason for parents' belief that they should be responsible for their children's viewing. Indonesian parents' sense of responsibility may reflect commonly held beliefs by parents in any country that they should monitor children's viewing, but (at least compared to UK parents) the Indonesian parents expressed a much stronger sense of protecting children from the possible effects of advertising.

2.5 General Discussion

There has not been any previous research into advertising to children in Indonesia and therefore the studies presented in this chapter were carried out to provide some background to the other research we carried out in Indonesia (see chapters 5 and 10). Compared to Western countries (where the majority of previous research has been carried out), television advertising in Indonesia has been a more recent development, and one that has been subject to less detailed regulation, in particular there has been little specific regulation about television advertising to children. Nonetheless the content analysis showed that the type of advertisements aimed at children (both the type of products and the style of the advertisements) was similar to advertising in Western countries. This may not be surprising given the global nature of marketing and the influence of Western companies in a country like Indonesia, which has a long history of being colonized by European powers. As in other countries, the most dominant type of product advertised to children was a food product, and most of these were ones that could be described as unhealthy food products. We did find one major difference in Indonesian advertising, compared to previous research in other countries, and this was the almost total lack of toy advertising. We believe the sample of television that was selected for the content analysis was typical of children's viewing at the time, and therefore the absence of advertisements for toys is an accurate reflection of Indonesian advertising. As we have suggested above, traditional toys (rather than Western style toys) may be more popular, and cheaper to buy, in Indonesia, but these are not likely the type of products that would be advertised on television. Nonetheless the difference between Indonesian and Western advertising would be worth further research, either in a more extensive content analysis of television advertising, or with research that focused on the nature of toy marketing to children in Indonesia.

The questionnaire to parents demonstrated that parents in Indonesia had similar concerns to parents in the UK about advertising to children, but for most responses, the Indonesian parents expressed stronger views. The stronger views could be towards either end of the scale, because the Indonesian parents were

more positive about some aspects of advertising (especially its value for providing information), but usually more negative about advertising aimed at children, and wanted more regulation about advertising to children. We have suggested that the latter effects may be related to the lack of regulation in Indonesia, but a full account of why Indonesian parents have more extreme views would need more research, using other methods like focus groups to find out the reasons behind parents' views.

There were some differences between our findings in Indonesia and findings from previous research in other countries, but overall there were more similarities, especially in the frequency of advertising to children, the dominance of food advertising, and the parents' concerns about advertising to children. Therefore when we investigated Indonesian children's understanding of television advertising (in chapter 5) we assumed that children's experience of television advertising in Indonesia would be similar to children's experience in the UK. To put this another way, we believed that the broadcasting environment in Indonesia and the UK were similar enough that we would be justified in drawing conclusions from samples in either country, without being concerned that there were major differences in Indonesian and UK children's television experience.

CHAPTER 3

EXPERIMENT 1

3.1 Introduction

In this chapter we will describe a study in which we examined young children's understanding of television advertising. Children were shown a television advertisement and then asked what that advertisement wanted them to do. In this (and the following experiments) we focused on television because television is still the medium most watched by young children, and most advertising aimed at children is through television.

Children are most likely to spend their time watching television than any other medium (Huston & Wright, 1998; Livingstone & Bovill, 1999) and while watching this medium they are exposed to advertising (Gunter et al, 2005; Oates et al., 2003). The first advertisements during children's programmes were for household products such as toothpaste and aspirin (Strasburger & Wilson, 2002), since then the most common products aimed at children have been food and toys (Kline, 1993; Kunkel et al, 2004; Strasburger & Wilson, 2002; Valkenburg and Cantor, 2001). As noted in chapter 1 (page 11) advertisers spend large sums of money to target the youth market because of its strong contribution to the consumer economy (Lauro, 1999; Rice, 2001). Kunkel and Gantz (1992) noted that U.S. television programmes gave 10 minutes of every hour to advertising, but more than 90% of the revenues from television advertising directed at children is reinvested in children's programmes (Goldstein, 1999). In Europe 94% of the revenue from advertising aimed at children is reinvested in children's programmes (Jackson, 2003) and therefore, advertising is important not only for marketers, but also for children's television production. Given the role and importance of advertising in television we focused on this medium in Experiment 1.

Many researchers have concluded that there is a significant change in children's understanding of television advertising about the age of 7 or 8 years.

Before that age children have been called limited processors who do not have the cognitive abilities to understand the purpose of advertisements (John, 1999; Roedder, 1981). Recent reviews of the literature on children and advertising (Gunter et al., 2005; Kunkel, et al. 2004) have concluded that experimental studies have shown that children have little understanding of advertising before the age of about 7 or 8 years (see page 20). In other words, it is not until after this age that most children become aware that advertisements aim to sell products (i.e. the persuasive intent of advertising). Before about 7 or 8 years children either do not understand why there are advertisements, or believe that advertisements simply provide information about what products are available in the shops (i.e. informational intent).

As pointed out in chapter 1 (page 25) nearly all the research into children's understanding of advertisements has employed verbal methodologies (Lawlor & Prothero, 2003). For example, children have been asked lists of questions about the nature of advertising or taken part in interviews (e.g. Oates et al, 2003; Ward & Wackman, 1973; Ward, Wackman & Wartella, 1977). The focus on verbal methods has led some researchers to argue that such methods have underestimated children's abilities (Bijmolt et al., 1998; Donohue et al., 1980; Macklin, 1987; Owen et al., 2007) because young children have difficulty in a verbal task as their language capability is still limited. Donohue et al (1980) showed young children an animated television advertisement then children were asked to point to one of two pictures to indicate what the advertisement wanted them to do. Donohue et al found that most children, including 3 and 4 year olds, pointed to a shopping scene and therefore they concluded that children understood television advertisements at this early age. In a similar study Macklin (1987) showed children an animated cereal advertisement and then the children were asked to point to one of ten pictures. Macklin found that 5-year-olds (but not younger children) chose a shopping picture more often than would be expected by chance.

Donohue et al. (1980) and Henke (1999) argued that because children as young as 3 years could relate an advertisement to a shopping picture the children understood the persuasive intent of advertising, If valid this claim would mean

that that the conclusions drawn from reviews like Gunter et al. (2005) and Kunkel et al. 2004) have underestimated children's ability by about 5 years. In contrast to Donohue et al, when Macklin found that 5-year-olds related an advertisement to a shopping picture, Macklin concluded that this performance meant only that the children understood informational intent of an advertisement. Although a more limited claim than Donohue et al, this would still mean that very young children had a better understanding of advertisements than previously assumed. If the claims based on the non-verbal tasks are correct they have major implications for describing the development of children's understanding of advertisements, and implications for decisions about regulating advertising. If young children have a greater understanding of advertising, then there would be less reason to argue that advertising to young children should be banned (Kunkel et al., 2004). Because the non-verbal studies have such implications it is important to find out if the results of these studies are correct or not.

As discussed in chapter 1 (pages 26-28) there are methodological problems in Donohue et al (1980) and Macklin (1987) because pictures were not shown in random order, and only some (but not all) of the pictures included the advertised product, and both these factors may have biased children's responses. Most importantly, neither of these researchers, nor other more recent ones (Owen et al., 2007) made sure that all the pictures shown to children were equally attractive. It may have been the case in all these studies that some pictures were more likely to be chosen by children irrespective of their knowledge about advertising. The pictures are not always illustrated, but when they are illustrated, or described, in the early studies it is clear that shopping picture usually included more features and more activity than the non-shopping pictures. Therefore the fact that children sometimes chose the shopping picture in preference to the others may only have been because the shopping picture was the most interesting or attractive one for young children.

These methodological problems cast doubt on the validity of the early studies. In Experiment 1 we designed a study to overcome the limitations that we have described. Instead of pictures we used five realistic dolls' house models (a

kitchen, a sitting room, a shop, a garden, and a dining room). Dolls' house models were used instead of pictures because researchers have shown that children understand and perform better when using models rather than pictures (DeLoache, 1986; DeLoache & Burns, 1994). For example, DeLoache & Burns (1994) asked young children (2 to 3-year-olds) to point to the pictures or to the models to indicate where they had previously seen a toy hidden and found that children in the model condition were better at finding the hidden toy than children in the picture group. DeLoache & Burns suggested that pictures may not always show things realistically and may be particularly confusing for young children. Therefore to avoid any ambiguity we used models instead of pictures.

We made three other methodological changes compared to the early studies. First, we included a control group of children who were not shown an advertisement but were asked to choose one of the models. If the shop model was no more or less attractive than the other models we expected that, in the control condition, the shop would be chosen one-fifth of the time (i.e. at the chance level). Second, every one of the models included a miniature representation of the advertised product (so that children could not select a model simply on the basis of whether or not it included a product). Third, the models were presented to different children in different random orders (in case children were biased in choosing a particular model depending on its spatial position). In these ways we hoped to avoid the methodological limitations of previous studies.

In both Donohue et al. (1980) and Macklin (1987) it was not clear whether the children were already familiar with the products that were used in those studies. If the children had been familiar with the products they may have chosen the shopping picture just because of previous experience of seeing the products in shops. Therefore we included two conditions with advertisements. In both conditions children were shown unfamiliar advertisements (so that they could not be biased by previous experience of the advertisement itself), but in one condition children saw an advertisement for a popular cereal that we expected would be familiar to the children. In the other condition, children saw an advertisement for a milk drink which was not available in the UK. If previous experience of the

product had any effect on the children's performance we expected there would be a difference between the two conditions. Specifically, if children already associated the cereal with shops then they might be more likely to choose the shop model in the cereal condition than in the milk drink condition because the milk drink should have no associations for the children.

3.2 Main hypothesis

Donohue et al. (1980) and Macklin (1987) showed children an advertisement and then asked them to point to a picture to indicate what the advertisement wanted them to do. Donohue et al and Macklin claimed that young children were more likely to point to a shop picture than other pictures. In our experiment we included conditions in which children saw an advertisement and a condition in which children did not see an advertisement. Following Donohue and Macklin we predicted that children who saw an advertisement before choosing a model would be more likely to choose the model shop than children who did not see the advertisement.

3.3 Participants

There were 90 children between the ages of 5.0 to 7.11. There were 30 5-year-olds with a mean age of 5 years 5 months (range 5.0-5.11), and 30 6-year-olds with a mean age of 6 years 4 months (range 6.0-6.11) and 30 7-year-olds with a mean age of 7 years 3 months (range 7.0-7.11). The children were recruited from two nurseries and four infant schools. The children had mostly middle class backgrounds. There were 3 conditions in the experiment and 10 children in each age group took part in each condition.

Ethical permission (from the Department of Psychology, University of Sheffield) and parental and school permission was obtained for each child. Children were told that they could withdraw from the experiment at any time, but none did so.

3.4 Materials

Two television advertisements were used. Like Donohue et al. (1980) and Macklin (1987) we included a cereal product and we also included a milk product. One advertisement was for Kellogg's "Rice Krispies" (a cereal), which was broadcast in the United Kingdom in 1983. The other advertisement was for "Milo" chocolate milk drink from South Africa, which was recorded from South African television. None of the children had seen either of the advertisements before. Children were familiar with Rice Krispies, but none had seen Milo products before. Each advertisement was 30 seconds in length and both were in colour.

The 'Rice Krispies' advertisement showed a girl at a table getting ready to eat her breakfast, then her brother comes to the table and appears to be unhappy. The boy complains that it is a Monday and that he has a maths lesson. His sister pours cereal into a bowl to lighten her brother's mood. While doing so, three animated characters called 'Snap', 'Crackle' and 'Pop' appear. Her brother is not convinced that he can be cheered up. He tells the characters that if they don't sing he will be all right. But the three animated characters keep singing a song about the cereal, and dancing round the bowl of cereal while stirring and pouring the milk over it. The end of the advertisement shows the boy being entertained by Snap, Crackle and Pop. The boy is now happy and is shown happily eating the cereal with his sister.

The 'Milo' advertisement starts with a young boy getting ready to run along a beach. Then he sees a dolphin in the sea, swimming parallel to the beach. The boy jumps up and starts running against the dolphin. The boy goes home afterward and his mother makes him a Milo chocolate milk drink. The boy drinks the "Milo". The next scene shows the boy in a stadium getting ready to run a race. Then the boy competes in and wins the race. During the race, there is a cut to the scene in which his mother gave him the glass of Milo. At the end of the advertisement the boy holds a trophy and a glass of Milo. A theme song plays in the background throughout the advertisement.

For the third group, an extract from a television programme from South Africa was chosen. The programme was 30 seconds long and in colour. The children had not seen the television programme before. In the first scene, a teenage girl tells the audience that a teenage boy (the programme's presenter) is visiting a viewer's house where two young children live (a boy and a girl). The children give the presenter a tour of their house. The presenter sees a drawing of a fairy on a wall, and is impressed with the drawing. He asks about the fairy's name and asks who made the drawing. The children tell him that their mother had drawn the fairy, but they do not know the fairy's name. Then they approached a cage with hamsters in it. The little boy takes the hamsters out of the cage, and they all play with them. The presenter asks what the hamsters' names are and the girl tells him. The extract ends when the little boy puts one of the hamsters inside the presenter's shirt and the presenter starts to giggle and scream.

Seven dolls' house rooms were used in the experiment; 2 for a practice task and 5 for the experimental task. The models included a bathroom, a bedroom, a kitchen, a shop, a dining room, a sitting room and a garden (see Figures 3.1 to 3.7). The models were made out of cardboard boxes covered with cream coloured paper. The base of each room was white in six of the models. The base of the garden model was green. Each box was 32cm wide x 22cm in depth x 22cm high.

Each of the model rooms included appropriate toy furniture obtained from a specialist model making shop. The toy furniture was different from the toy furniture that the children typically played with in their nurseries and schools, to avoid any previous associations with the items. In the bathroom there were: a bathtub, a toilet, a sink, a mirror and a towel rack (see figure 3.1). In the bedroom: a bed, an armchair, a round table and a dressing table and chair (figure 3.2). In the kitchen: a trolley, a refrigerator, a cooker, a kitchen cabinet and a sink (figure 3.3). In the shop: a cash register, two window display cupboards and an L-shaped cupboard. The shop was also filled with miniature vegetables, food cans, and bottles (figure 3.4). In the sitting room: two sofas, a stool, a carpet and a table (figure 3.5). In the dining room: a dining table, four dining chairs, four plates, two

glasses and a cupboard (figure 3.6). In the garden: a garden table complete with two chairs, a sundial and two ponds (figure 3.7).

Model rooms:

A. For Practice task:

Figure 3.1. Bathroom

Figure 3.2. Bedroom

B. For Experimental task:

Figure 3.3. Kitchen

Figure 3.4. Shop

Figure 3.5. Sitting room

Figure 3.6. Dining room

Figure 3.7. Garden

Two dolls (a boy doll and a girl doll) were used for the practice task and the two other dolls (a different boy doll and girl doll) were used in the experimental task. Stickers were given to the children as a thank you.

A television and video player were used to show the advertisements. The models were placed on low tables to show to the participants, and cloths were used to hide them as necessary. A mini disc player/recorder was used to record children's answers to the verbal questions.

3.5 Procedure

3.5.1 Non-verbal task

The children were tested individually and the study lasted about seven minutes for each child. Children were collected from the classroom one by one and led to a separate room. The experimenter informed the child that they were "going to watch television and play some games." After introducing herself the experimenter gave the child a doll and said, "Here is your doll. Now we are going to play some games. I will ask you a question and I want you to show me where the doll should go." The doll used was always the same gender as the child.

The experimenter then uncovered the practice task models and showed the bathroom and bedroom models (figures 3.1 and 3.2) to the child. The models were positioned so that each model was an equal distance from the child. The child was asked to name the models, "Can you tell me what these models are?" If the child did not answer or did not know, the experimenter would give the name and explain the model to the child. The experimenter then asked the child to imagine that the doll was dirty because it had been playing outside in the mud. Then the experimenter asked, "If the doll is dirty, where does the doll want to go? Could you show me where the doll wants to go?" The experimenter asked the child to look at the models and asked the child to pick one of the models. The child's response was recorded. The models were then covered again.

The experimenter then moved to different table. She then said to the child, "Now we are going to play more games." The experimenter removed a cloth and asked the child to describe the 5 models to be used in the experimental task (figures 3.3-3.7), "Can you tell me what these models are?" The models were placed in a different random order for each child. Each of the models included the product shown in the video. If the child had seen the Milo advertisement a Milo product was included in each model, and if the child had seen the Kellogg's advertisement the Kellogg's product was included in each model. The products were made by using miniature cans and boxes. There was no product in the programme condition.

The experimenter gave the child a new doll, and told him or her that they were going to watch television. In the advertisement conditions children saw either the Kellogg's advertisement or the Milo advertisement. In the no advertisement conditions children saw the programme extract. After watching the television children were told (in the advertisement condition) "Now that was an advert. What does it want the doll to do? Can you look at the models again and show me where the advert wants the doll to go to?". This wording was the same as used by Macklin (1987), except that Macklin referred to pictures in her study and we referred to models in Experiment 1. If the child did nothing, the experimenter would use a prompt and said, "You can take the doll to any of the models. Which one does the advert wanted the doll to go to?" The child's choice of model room was noted. In the control condition the same wording was used, but children were told that they had watched a programme and then asked where the programme wanted the doll to go to.

3.5.2 Verbal task

After completing the model task the children in the Kellogg's and Milo conditions were given a verbal task, so that we could compare their verbal understanding of advertisements with their non-verbal performance in the model task. For the verbal task the experimenter asked the children five questions about their knowledge of advertising. The questions were based on those used by Oates

et al., (2002) asked in the same order to each child, (1) "What are adverts for?" (2) "Why do we have adverts?" (3) "Who makes adverts?" (4) "Could you tell me more about adverts?" (5) "What are your favourite adverts?" The child's answers were recorded and later transcribed. The last question (5) was included so that all children (even those who were unable to answer questions 1-4) were able to say something, and therefore finish the experiment in a positive way, but question (5) was not scored.

At the end of the experiment the child was thanked, given a sticker and then returned to his or her classroom.

3.6 Results

3.6.1 Non-verbal task

We compared children's performance in the two experimental conditions (Kellogg's and Milo). Chi-Square tests could not be used because the expected frequencies were less than 5. Therefore, a Fisher two-tailed test was used. There were no differences between the two conditions for any of the age groups (5-year-olds, $p = 0.47$; 6-year-olds, $p = 1$; 7-year-olds, $p = 1$). Because there were no differences between the two conditions we combined them into a single experimental condition.

Table 3.1 shows the percentage of children in the combined experimental condition who went to the shop model. The table also shows the percentage of children in the control condition who went to the shop model.

	Experimental condition (n = 20)	Control condition (n = 10)
5-year-olds	10 %	30 %
6-year-olds	15 %	20 %
7-year-olds	15 %	10 %
All children	13.3 %	20 %

Table 3.1. Percentage of children in each condition and age group who went to the shop model in Experiment 1. Chance performance, in each cell, was 20%.

There was no significant difference between children in the experimental group and the control group (5-year-olds, $p = 0.30$; 6-year-olds, $p = 1$; 7-year-olds, $p = 1$).

The three age groups were compared using a Fisher test (2-tailed). There were no significant differences between the 5-, 6-, and 7-year-olds in their choice of the shop. Five-year-olds vs 6-year-olds, $p = 1$; 5-year-olds vs 7-year-olds, $p = 1$; 6-year-olds vs 7-year-olds, $p = 1$.

As the shop was 1 of 5 models there was a 0.2 chance of children choosing the model shop by guessing. In the experimental group $n = 20$ for each age group. From the binomial distribution the probability of 8 or more children in one age group choosing the shop model was 0.03, and the probability of 7 or more children choosing the shop was 0.09. Therefore we considered performance was better than chance only if 8 or more children (i.e. 40% or more) in the group chose the shop ($p < .05$). Therefore none of the age groups performed better than chance expectations in the experimental condition.

In the control condition chance was 0.2 and $n = 10$ for each age group. From the binomial distribution the probability of 5 or more children in one group choosing the shop was 0.03, and the probability of 4 or more children choosing

the shop was 0.12. Therefore we considered performance was better than chance only if 5 or more children (i.e. 50% or more) in the group chose the shop ($p < .05$). Therefore none of the three age groups in the control condition performed better than chance.

Table 3.2 shows the percentage of children in the combined experimental condition who went to the models other than the shop. The table also shows the percentage of children in the control condition who choose kitchen, sitting room, dinning room and garden models.

		KITCHEN	SITTING ROOM	DINNING ROOM	GARDEN
AGE 5	**EXP (N= 20)**	**10 %**	**35 %**	**35 %**	**10 %**
	CONTROL (N=10)	0 %	50 %	0 %	20 %
AGE 6	**EXP (N = 20)**	**10 %**	**15 %**	**35 %**	**25 %**
	CONTROL (N = 10)	30 %	30 %	10 %	10 %
AGE 7	**EXP (N = 20)**	**20 %**	**5 %**	**25 %**	**35 %**
	CONTROL (N= 10)	10 %	30 %	30 %	20 %

Table 3.2. Percentage of children in each condition and age group who went to others models in Experiment 1.

Using the fisher test, we found there is no significant difference between children in the experimental group and the control group in choosing kitchen (5-year-olds, $p = 0.54$; 6-year-olds, $p = 0.30$; 7-year-olds, $p = 0.64$), sitting room (5-year-olds, $p = 0.69$; 6-year-olds, $p = 0.63$; 7-year-olds, $p = 0.09$), dining room (5-year-olds, $p = 0.06$; 6-year-olds, $p = 0.07$; 7-year-olds, $p = 1$) or garden (5-year-olds, $p = 0.58$; 6-year-olds, $p = 0.63$; 7-year-olds, $p = 0.67$).

As explained earlier (page 71), for each age group, performance was better than chance (binomial distribution, $p < .05$) if 40% or more of the children choose the kitchen, sitting room, dining room, or garden ($p < .05$). Therefore none of the

age groups differed from chance expectations for going to any of the rooms in the experimental condition.

In the control condition (page 71-72), for each age group, performance was better than chance (binomial distribution, $p < .05$) if 50% or more of the children choose the kitchen, sitting room, dining room or garden model ($p < .05$). Only the 5-year-olds performed at the chance level in choosing the sitting room (50%). None of the other age groups in the control condition performed at greater than chance levels when choosing a room.

3.6.2 Verbal task

Children in the experimental group ($n = 60$) had been asked 3 questions about the purpose of advertising ('What are adverts for?' 'Why do we have adverts?' 'Can you tell me more about adverts?'). Children were scored according to the most sophisticated answer they gave to any one of these questions. Children's answers were categorized as follows.

If a child said (for example) 'to make people want to buy things' or 'to try to get people to buy things' or 'for making people to go and buy it' these responses showed that children understood the persuasive intent of advertising.

Children who gave responses like 'to tell you something is being sold at the shop' or 'showing people about how much it cost in the shop and is it healthy or not' or 'so see what can you buy in the shop' were categorized as children who understood advertisements as a source of information.

Children who gave responses like 'for you to get dressed while you are watching it' or 'Instead you just sit on, you could have a rest' or 'it shows you funny things' were categorized as children who thought advertisements were for a break or to entertain.

Some children said 'don't know' or did not give an answer.

All the responses were scored by the experimenter and a second coder. Inter-rated reliability was 98%.

The percentages of children's responses in each category are shown in Table 3.3. As can be seen from the table, older children give more appropriate responses to the question about the purpose of advertising. Younger children were more likely to think that advertisements were no more than for a break.

	5-year-olds (n = 20)	6-year-olds (n = 20)	7-year-olds (n = 20)
Don't know	40 %	25 %	15 %
For a break	20 %	20 %	10 %
To inform	25 %	30 %	25 %
To persuade	15 %	25 %	50 %

Table 3.3. Children's responses to the questions about the purpose of advertising in Experiment 1.

We compared children's performance on the non-verbal and the verbal task. The children were divided into two groups, those who understood persuasive intent (as shown in the last row of table 3.3), and those who did not understand persuasive intent in the verbal task (i.e. children in the first 3 rows of table 3.3). Within each group there were children who went to the shop and those who did not go to the shop in the non-verbal task. We expected that the children who understood persuasive intent would be more likely to go to the shop in the non-verbal task, but a Fisher test (2-tailed) showed that there was no relationship between the tasks ($p = 1$).

In a further analysis we divided the children into two groups, those who understood persuasive intent and informational intent (i.e. children in the third and fourth rows of figure 3.3). Within each group there were children who went to the shop and those who did not go to the shop in the non-verbal task. We expected the

children who performed better on the verbal task (i.e. those demonstrating a knowledge of informational or persuasive intent) would be more likely to go to the model of the shop in the non-verbal task, but there was no relationship between the tasks ($p = .49$).

Children were also asked "Who makes adverts?". Children's responses were divided into categories (see table 3.4). Most children said 'don't know' or made an incorrect response like 'illustrator' or 'actresses'. Some children just said the word 'shop' and this answer was hard to interpret because it could mean that the child knew that some shops do make advertisements, or it could mean only that children thinking that advertised products are found in shops. Therefore this response was noted separately. Other children said that advertisers make advertisements or gave the name of a shop (e.g. Tesco), which could have meant that children realized that a specific shop, like a company, may make an advertisement. This scoring was designed to be generous, so that we did not underestimate the children's knowledge. The inter-rater reliability was 97%. None of the children referred to the companies who make products as being the people who make advertisements. As can be seen from Table 3.4 the number of children who said anything that could be interpreted as an understanding of the source of advertisements was very small.

	5-year-olds n = 20	6-year-olds n = 20	7-year-olds n = 20
Don't know	85 %	90 %	65 %
"Shop"	5 %	10 %	20 %
Advertisers/name of a shop	10 %	0 %	15 %
Companies	0 %	0 %	0 %

Table 3.4. Children's responses to the question 'Who makes adverts?' in Experiment 1.

3.7 Discussion

In Experiment 1, children carried out both a non-verbal task and a verbal task to find out about their understanding of advertisements. The non-verbal task was based on the type of methodologies used by previous researchers (e.g. Donohue et al., 1980; Macklin, 1987), but as discussed in the introduction to this chapter we tried to avoid the methodological limitations of the previous researchers. In particular, and most importantly, we included a group of children (the control children in the non-advertisement condition) who went through the same procedure as the children in the experimental conditions, but no mention of advertisements was made to the control children. The control children only watched a programme extract and were then asked to choose a model. The performance of each age group in this control condition was no better than chance. Chance was 20%, and overall children in the control task chose the shop model on 20% of the trials. This meant that the shop was no more or less attractive than the other models and that there was no reason to believe that children would chose (or avoid) the shop model, because it was in some way more attractive (or more unattractive) than the other models.

The experimental groups were shown an advertisement (for a cereal or a milk drink) and then asked to show what the advertisement wanted them to do. This was the same instruction that previous researchers have used. Previous researchers had asked children to point to one of a choice of pictures, but we asked children to take a doll to a model because we believed that using a model was a more appropriate task for young children (DeLoache & Burns, 1994), but otherwise the procedure was as used in previous non-verbal tasks (Macklin, 1987).

The children who were shown the advertisement did not go to the shop model any more often than would be expected by chance, and the children in the experimental group did not perform significantly differently from the control group. Therefore, contrary to our prediction based on previous research that children would go to the shop model, there was no evidence that children who

were asked where they should go in response to the advertisement were likely to choose the shop. This was the case for all age groups. This result therefore does not support Donohue et al. (1980) who found that children as young as 3 years pointed to a shopping picture after seeing an advertisement. Nor does it support Macklin (1987) who found that 5-year-olds pointed to a shop picture. As we have suggested above, the success of children in these studies may have been related to the method of those studies that could have biased the children towards choosing the shopping picture. Having removed those biases in Experiment 1 there was no evidence that young children associated a television advertisement with a shop.

In both Donohue et al. (1980) and Macklin (1987) it was not clear whether the children were already familiar with the products that were used in those studies. If the children had been familiar with the products they may have chosen the shop picture because of previous associations between the product and going on shopping trips. We examined that possibility by including familiar and unfamiliar products in the two experimental conditions. If children associated the Kellogg's cereal as something they had seen in a shop we thought that they would be more likely to choose the shop model in the Kellogg's condition than in the Milo condition (because none of the children would have seen the Milo product before). But there was no difference between the Kellogg's and the Milo conditions and therefore no evidence that familiarity was a factor in children's choice of the shop picture.

As there were several methodological differences between Experiment 1 and the studies by Donohue et al (1980) and Macklin (1987) we cannot be sure which particular differences (or combination of differences) may have led to the different results. The differences included our use of models (rather than pictures); making sure that the shop model was no more or less attractive than the other models; our inclusion of the product in every model scene (rather than just in some scenes), and randomizing the position of our models in each trial.

Other more recent researchers have also argued that children can associate advertising with a picture of shopping (Bijmolt et al., 1998) or money (Owen et

al., 2007), but as we pointed out in chapter 1 (pages 29-30), despite these claims there was no evidence in the papers by Bijmolt et al. and by Owen et al. that young children pointed to the shopping or money pictures more often than chance in those studies. The only other non-verbal study, an unpublished one by Ballard-Campbell (1983), found that young children (4- and 6-year-olds) were poor at relating an advertisement to a shopping picture, and therefore our results agree with Ballard-Campbell's findings.

In Experiment 1 we included a verbal task as a measure of children's understanding of persuasive intent. We found that by the age of 7 years half of the children gave a verbal response that indicated an understanding of persuasive intent. This result corresponds with findings from previous researchers (Gunter et al., 2005; Kunkel et al., 2004) who have argued that understanding persuasive intent is developing from about 7 or 8 years of age. However, there was no relationship between the children who performed well on the non-verbal task (i.e. went to the shop) and the ones who performed well on the verbal task (i.e. understood persuasive and informational intent). The fact that even the children with a good understanding of advertising in the verbal task did not necessarily go to the shop model suggests that the non-verbal task may not be a useful measure of advertising awareness.

In summary, in Experiment 1 we did not find any evidence that children succeeded on the non-verbal model task at an early age, or before the age when they would typically succeed on verbal measures of advertising understanding. The children's lack of success on the non-verbal task contrasts with findings from previous research (Donohue et al., 1980; Macklin, 1987). As pointed out in chapter 1 this early research is very frequently quoted, especially in the marketing literature and is cited as evidence that young children have some understanding of advertisements, with the implication that it is then acceptable to advertise to such young age groups. The early studies have been backed up by similar suggestions from some later researchers (Bijmolt et al., 1998; Owen et al., 2007), who, despite lack of clear evidence in their studies, have also argued that young children have an understanding of advertising. Because of the importance of this debate and its

implications about advertising to young children, we decided to replicate Experiment 1 in several following studies (described in chapters 4 to 7) to check the reliability of our findings.

A further reason for replicating Experiment 1 was that the children in the non-verbal task performed very poorly. None of the age groups (5 to 7 years of age) in the experimental condition performed better than chance. As pointed out by Macklin (1987) and Kunkel et al. (2004) picture tasks do not involve an understanding of persuasive intent. The same applies to the model task in Experiment 1. A child does not need to know that advertisements are designed to persuade in order to make the link between a television advertisement and a picture or a model of a shop. Recognizing that an advertisement is connected to shopping involves less awareness of advertising than understanding persuasive intent. The fact that, for example, half the 7-year-olds in Experiment 1 could refer to persuasive intent in the verbal task, but less than a quarter succeeded on the non-verbal task was therefore surprising. In Experiment 1 children carried out the non-verbal task first. There had been two reasons for giving the non-verbal task at the beginning of Experiment 1. First, most previous researchers also gave non-verbal tasks at the beginning of their experiments (Donohue et al., 1980; Macklin, 1987; Owen et al., 2007) and our procedure followed this previous research. Second, the non-verbal task was the focus of Experiment 1 and we did not want to affect the children's performance in the non-verbal task by giving them other tasks first.

As the non-verbal task was given first in Experiment 1 the children performed the non-verbal task with little context and this may have made it difficult for them. Therefore, in Experiment 2 we repeated Experiment 1, but in Experiment 2 the children performed the verbal task first. In other words, the children were asked to think about and discuss advertisements before they were given the non-verbal task. We included a wider age range of children in Experiment 2. Because the 7-year-olds in Experiment 1 had performed poorly we added an older age group of 8-year-olds. Also, in the expectation that children

might perform better in Experiment 2, we included a younger group (of 4-year-olds) as well.

CHAPTER 4

EXPERIMENT 2

4.1 Introduction

In Experiment 1, 5-7-year-olds were asked about their understanding of advertising using a non-verbal task (based on Donohue et al., 1980; Macklin, 1987) without any prompts, and then a verbal task (based on Oates et al., 2002). Compared to the findings from previous researchers the children in Experiment 1 performed poorly in the non-verbal task. Experiment 2 was conducted to find out if a change in procedure might affect the children's performance.

All the materials in Experiment 2 were the same as in Experiment 1, but in Experiment 2 children were given the verbal task first. In this way the children had the opportunity to think and talk about advertising before they were asked to do the non-verbal task. We predicted that the greater context might lead to better performance on the non-verbal task in Experiment 2 (than in Experiment 1). The procedures for the non-verbal and verbal tasks in Experiment 2 were exactly the same as in Experiment 1

4.2 Main hypothesis

Children in Experiment 2 will perform better than children in Experiment 1 in the non-verbal condition.

4.3 Participants

There were 147 children between the aged 4 to 9 years. There were 5 age groups. 30 4-year-olds with the mean age of 4 years 4 months (range 4.0-4.11); 30 5-year-olds with a mean age of 5 years 5 months (range 5.0-5.11); 30 6-year-olds with a mean age of 6 years 5 months (range 6.0-6.11); 30 7-year-olds with a mean age of 7 years 4 months (range 7.0-7.11), and 27 8-9-year-olds with mean

age 9 years (range 8.0-9.11). There were equal numbers of each age group in each of the three conditions

4.4 Materials and Procedure

The materials used in Experiment 2 were the same as in Experiment 1. But in Experiment 2, children were asked about their knowledge of advertisements first by answering the 5 questions as in Experiment 1 (see pages 69-70). Children then were asked to do the practice task and the non-verbal task with the dolls' house models.

4.5 Results

4.5.1 Non-verbal task

Children's responses in Experiment 2 were analyzed as in Experiment 1. As in Experiment 1 we found there was no significant difference between the Milo and the Kellogg's condition (4-year-olds, $p = 1$; 5-year-olds, $p = 1$; 6-year-olds, $p = 0.09$; 7-year-olds, $p = 0.35$, and 8-9-year-olds, $p = 0.64$) and therefore we combined them together as an experimental group (see table 4.1).

	Experimental condition	Control Condition
4-year-olds	30 %	40 %
5-year-olds	20 %	30 %
6-year-olds	20 %	0 %
7-year-olds	35 %	10 %
8-9-year-olds	44 %	11 %
All children	30 %	18 %

Table 4.1. Percentage of children who chose the shop in each condition and each age group in Experiment 2. Chance was 20%. For each of the 4-7-year old age groups there were 20 children in the experimental condition and 10 in the control condition. For the 8-9-year-old age group there were 18 children in the experimental condition and 9 in the control condition.

There was no significant difference using Fisher tests (2-tailed) between children in the experimental condition and children in the control condition (4-year-olds, $p = 0.69$; 5-year-olds, $p = 0.66$; 6-year-olds, $p = 0.27$; 7-year-olds, $p = 0.21$; and 8-9-year-olds, $p = 0.19$). Therefore, children in the experimental condition were no more likely to choose the shop than children in the control condition.

The five age groups were compared using Fisher tests (2-tailed). There were no differences between the five age groups: $p = 0.72$ (4 vs. 5 years); $p = 0.72$ (4 vs. 6 years); $p = 1$ (4 vs. 7 years); $p = 0.5$ (4 vs. 8-9 years); $p = 1$ (5 vs. 6 years); $p = 0.48$ (5 vs. 7 years); $p = 0.16$ (5 vs. 8-9 years); $p = 0.48$ (6 vs. 7 years), $p = 0.16$ (6 vs. 8-9 years); and $p = 0.74$ (7 vs. 8-9 years).

We also compared children's performance in Experiments 1 and 2. There were no differences between the children in Experiments 1 and 2: 5-year-olds, $p = 0.66$: 6-year-olds, $p = 1$; and 7-year-olds, $p = 0.27$ (Fisher tests). In other

words, children in Experiment 2 were no more likely to choose the shop model than children in Experiment 1.

As explained in Experiment 1 (pages 71-72), for each age group performance was better than chance (binomial distribution, $p < .05$) if 40% or more of the children chose the shop ($p < .05$). Therefore only the 8-9-year-olds in the experimental condition performed better than chance. None of the other age groups in either condition performed better than chance.

As in Experiment 1, we recorded children's responses in choosing models other than the shop. The table 4.2 showed the percentages of children in each condition and age groups who went to other models (kitchen, sitting room, dining room or garden).

		KITCHEN	SITTING ROOM	DINNING ROOM	GARDEN
AGE 4	**EXP (N= 20)**	**0 %**	**50 %**	**10 %**	**10 %**
	CONTROL (N=10)	10 %	50 %	0 %	0 %
AGE 5	**EXP (N = 20)**	**10 %**	**35 %**	**10 %**	**25 %**
	CONTROL (N = 10)	10 %	50 %	10 %	0 %
AGE 6	**EXP (N = 20)**	**10 %**	**25 %**	**15 %**	**30 %**
	CONTROL (N= 10)	10 %	70 %	10 %	10 %
AGE 7	**EXP (N= 20)**	**5 %**	**30 %**	**10 %**	**20 %**
	CONTROL (N=10)	20 %	40 %	10 %	20 %
AGE 8/9	**EXP (N = 18)**	**0 %**	**33 %**	**11 %**	**11 %**
	CONTROL (N = 9)	0 %	56 %	0 %	33 %

Table 4.2. Percentage of children in each condition and age group who went to others model in Experiment 2.

We compared children's performance in experimental and control groups in each age group by using Fisher tests, and found that only the 6-year-olds in the control condition were more likely to choose the sitting room compared to children in experimental group ($p = .05$). There was no significant difference between children in experimental group and control group in choosing the kitchen (4-year-olds, $p = 0.33$; 5-year-olds, $p = 1$; 6-year-olds, $p = 1$; 7-year-olds, $p = 0.53$; and 8-9-year-olds, $p = 1$), sitting room (4-year-olds, $p = 1$; 5-year-olds, $p = 0.69$; 7-year-olds, $p = 0.69$; and 8-9-year-olds, $p = 0.41$), dining room (4-year-olds, $p = 0.54$; 5-year-olds, $p = 1$; 6-year-olds, $p = 1$; 7-year-olds, $p = 1$; and 8-9-year-olds, $p = 0.54$), garden (4-year-olds, $p = 0.54$; 5-year-olds, $p = 0.14$; 6-year-olds, $p = 0.37$; 7-year-olds, $p = 1$; and 8-9-year-olds, $p = 0.29$)

As explained in chapter 3 (page 71-72) performance was better than chance (binomial distribution, $p < .05$) if the percentage of children choosing one of the models was 40% or more. As shown in table 4.2 only 4-year-olds performed better than chance in choosing the sitting room, but none of the other age groups in experimental groups performed better than chance. In the control group, performance was better than chance (binomial distribution, $p < .05$) if the percentage of children choosing one of the models was 50% or more. As shown in table 4-, 5-, 6-, and 8/9-year-olds performed better than chance in choosing sitting room. None of the other rooms were chosen more often than chance expectations.

4.5.2 Verbal task

The verbal task was as in Experiment 1 (except that the verbal task was given to the children before the non-verbal task). The responses of the children in the experimental condition to the three questions ("What are adverts for?"; "Why do we have adverts?", and "Could you tell me more about adverts?") were divided into categories as in Experiment 1 (as described on page 73) - see Table 4.3. Inter-rater reliability was carried out on the whole sample and agreement was 95%.

	4-year-olds (n = 20)	5-year-olds (n = 20)	6-year-olds (n = 20)	7-year-olds (n = 20)	8-9-years (n = 18)
Don't know	55 %	35 %	20 %	15 %	6 %
For a break	25 %	25 %	15 %	0 %	6 %
To inform	10 %	15 %	50 %	40 %	17 %
To persuade	10 %	25 %	15 %	45 %	72 %

Table 4.3. Children's responses to the questions regarding the purpose of advertising in Experiment 2.

As can be seen in table 4.3, the older the children the more likely they were to give a response that indicated that they understood the persuasive intent of advertising. A comparison of table 3.3 (page 74) and table 4.3 shows that the percentage of children in Experiment 1 and in Experiment 2 who understood persuasive intent was similar: 5-year-olds (Expt 1, 15%, Expt 2, 25%); 6-year-olds (Expt 1, 25%, Expt 2, 15%); and 7-year-olds (Expt 1, 50%, Expt 2, 45%).

Children's performance on the verbal and non-verbal tasks was compared as in Experiment 1 (pages 74-75). There was no relationship between the performance of children who understood persuasive intent in the verbal task and those who went to the shop in the non-verbal task ($p = .25$) by using Fisher tests (2-tailed). Nor was there a relationship between the performance of the children who understood persuasive and informational intent in the verbal task and those who went to the shop ($p = 1$).

As in Experiment 1 children were also asked "Who makes adverts?" and their responses were coded as described for Experiment 1 (see page 75). Inter-rater reliability was 98%. See table 4.4.

	4 years n = 20	5 years n = 20	6 years n = 20	7 years n = 20	8-9 years n = 18
Don't know	100 %	95 %	95 %	85 %	61 %
"Shop"	0 %	5 %	5 %	0 %	11 %
Advertisers/name of a shop	0 %	0 %	0 %	10 %	11 %
Companies	0 %	0 %	0 %	5 %	17 %

Table 4.4. Children's responses to question 'Who makes adverts?' in Experiment 2.

As in Experiment 1, few children gave appropriate answers to the question about who makes advertisements. Fifteen-per-cent of the 7-year-olds in Experiment 2 gave a response that might have indicated some awareness of who made advertisements by referring to specific shops or saying companies made advertisements. This was the same percentage as in Experiment 1. Twenty-eight per cent of the 8-year-olds in Experiment 2 showed some awareness. As noted in Experiment 1, our scoring was generous so as not to exclude children who might have had some understanding, but even with this scoring few of the children, especially the younger ones, demonstrated much awareness of the source of advertisements.

4.6 Discussion

Experiment 2 was a continuation of Experiment 1. The materials and procedure were the same as in Experiment 1 except that advertisements were discussed before children did the non-verbal task. We had expected that the focus on advertisements at the beginning of the experiment might help the children in the non-verbal task, but (for the same age groups as in Experiment 1) there was no change in their non-verbal performance. In Experiment 2 the 5- to 7-year-olds in the experimental condition did not perform better than the children in the control groups, and none of the 5- to 7-year-olds chose the shop model more than would

be expected by chance. Therefore, the greater focus on advertising before the non-verbal task did not result in better performance.

We included an older age group of 8-9-year-olds in Experiment 2 and this group did choose the shop model significantly more than chance. Nonetheless, the 8-9-year-olds did not perform better than the 8-9-year-old control group, and the 8-9-year-olds were not significantly different from any of the other age groups. Therefore there was no clear evidence that the 8-9-year-olds understood that the television advertisement wanted them to go to the shop.

Overall there was no evidence, in Experiment 2, that children could succeed on the non-verbal task. This confirmed Experiment 1 and did not support those previous researchers who have claimed that non-verbal tasks allow children to demonstrate an understanding of the relationship between advertising and a shop (Bijmolt et al., 1998; Donohue et al., 1980; Macklin, 1987; Owen et al., 2007).

In the verbal condition of Experiment 2 the children performed like the children in Experiment 1. There was a general improvement in the children's understanding of persuasive intent, and three-quarters of the 8-9-year-olds showed a knowledge of persuasive intent in response to verbal questions. There was no relationship between children's performance on the verbal and non-verbal tasks. The lack of relationship was highlighted by the performance of the oldest group (the 8-9-year-olds). A large percentage (72%) of the 8-9-year-olds successfully referred to persuasive intent in the verbal task and this was in contrast to the smaller percentage (44%) of 8-9-year-olds correctly choosing the shop model in the non-verbal task. This suggests that a non-verbal task might be more difficult for some children than a verbal one. These results did not support previous researchers (Donohue et al., 1980; Macklin, 1987) who have argued the non-verbal tasks are a more appropriate way to test children's knowledge of advertising.

In the next study, Experiment 3, we repeated Experiment 2 with a group of children in Indonesia. All the previous research using non-verbal tasks has been carried out in Western countries: in the USA (Donohue et al., 1980; Macklin, 1985; 1987), in the UK (Owen et al., 2007) or in the Netherlands (Bijmolt et al., 1998). In fact, virtually all research into children and advertising has been carried out in the West (Gunter et al., 2004; Kunkel et al., 2005). The main exception is the work by Chan and McNeal (2004) who have carried out many studies in China.

On the one hand we had no reason to expect that children in Indonesia would perform the non-verbal task differently from children in the UK in Experiment 2. On the other hand, as pointed out in chapter 2 advertising regulation is less strict in Indonesia than in the UK, and Chan and McNeal (2004) suggested that when regulation is weak (as in China) dishonest or exaggerated advertising is more likely. Chan and McNeal argued that when advertising is exaggerated children might learn to be cynical about advertising at an earlier age (e.g. by being disappointed when they buy a product that does not measure up to the promise of the product's advertisement). Chan and McNeal also suggested that in countries where regulation is limited parents might spend more time warning young children about advertisements and that children might therefore become more aware of the purpose of advertising. Nonetheless, when Chan and McNeal asked a group of 6-7-year-olds in China about the purpose of advertising they found that about a third of the group referred to persuasive intent. As Blades and Oates (2007) pointed out, this proportion of children was similar to the proportion reported for the same age group in many Western studies, and did not actually support Chan and McNeal's suggestion that Chinese children might be more aware of advertising. Nonetheless, Chan and McNeal's argument that children in countries with little regulation might have an earlier awareness of advertising might apply in Indonesia.

In Experiment 2, children in control group choose the sitting room, at greater than chance levels, as the place where the advertisement wanted the doll to go. One of the reasons for children choosing this room might have been that children associated what they saw on the television during the task with the

models presented in front of them. Children in control condition watched a segment from South African television programme (see page 65) where a boy and a girl were showing a television presenter around their house. They then talked about fairy's drawings and played with hamster in the sitting room. Children might link activities shown on the TV segment (i.e. talking and playing) with the 'sitting room' model. Hence in our experimental group might have preferred the sitting room because they thought that the 'sitting room' model was the place where the TV segment wanted them to take the doll to. Therefore in the Experiment 3, we asked children to verbally explain the reason why they chose a particular model.

CHAPTER 5

EXPERIMENT 3

5.1 Introduction

In Experiment 3 we repeated Experiment 2 with 4- to 7-year-olds in Indonesia. As far as we know this was the first study of children's understanding of advertising in Indonesia. Apart from the research by Chan and McNeal (2004) in China there is very little research into children and advertising in non-Western countries (Blades & Oates, 2007). By testing children in Indonesia we could find out if the results of Experiments 1 and 2 generalised to a different country and a different culture.

We pointed out (in the Discussion to Experiment 2) some of the reasons why children in Indonesia could be more aware about advertising than children in the West. Chan and McNeal (2004) suggested that lack of regulation might result in children becoming more cynical about advertisements, or parents spending more time telling young children about advertising. However, there is no research on these issues in Indonesia, and we do not know whether Indonesian parents do warn children more about advertisements. With the lack of previous research we therefore only suggest the null hypothesis for Experiment 3 - that there will be no difference between the performance of children in Indonesia and the performance of UK children of the same age in Experiment 2.

5.2 Main hypothesis

There will be no difference between the performance of children in Indonesia in Experiment 3 and the children in the UK in Experiment 2.

5.3 Participants

Eighty children from Indonesia took part between the ages of 4.00 – 7.11 in Experiment 3. The children were divided equally into four age groups each of 20 children with a mean age 4 years 3 months (range 4.0-4.11); 5 years 4 months (range 5.0-5.11); 6 years 3 months (range 6.0-6.11), and 7 years 4 months (range 7.0-7.11). The children were recruited from one school in Jakarta, Indonesia. The children were from the middle class and lower class families. Bahasa Indonesia was their first language although the children were taught in English as their second language.

5.4 Materials and Procedure

The materials and instructions were the same for the children in Indonesia as in Experiment 2 (i.e., the verbal task was given before the non-verbal task). However the instructions were given in Bahasa Indonesia. The English instructions were translated by the experimenter into Bahasa Indonesia. The instructions were then translated back from Bahasa Indonesia into English by a bilingual speaker to check that the English-Bahasa Indonesia translation was accurate. The children were shown the same advertisements as in Experiment 2 to be consistent. The advertisements were in English, but as all the children in Experiment 3 were taught in English we expected them to understand English well enough to understand the content of the two advertisements.

As explained in Experiment 1, in the UK children were familiar with Kellogg's as a product, but were unfamiliar with Milo as a product. The reverse was true in Indonesia because children there were familiar with Milo, but were unfamiliar with Kellogg's. Therefore the contrast between a familiar and an unfamiliar product was maintained. Neither advertisement had been shown on Indonesian television, and therefore (as in Experiments 1 and 2) both advertisements were unfamiliar to the children.

To save time and resources in school there was no control group in Experiment 3. As explained in Experiments 1 and 2 the control group had been important to make sure that the room model was not chosen more often than chance. We found no evidence that any of the other age groups in Experiment 1 were more likely to go to the room model than any of the other models except 5-year-olds. There was a slight bias in children choosing the sitting room in Experiment 2. Therefore in Experiment 3 we asked the children to explain why they picked a particular model room.

5.5 Results

5.5.1 Non-verbal task

The non-verbal results in Experiment 3 were analyzed as in Experiments 1 and 2. Although Milo is available widely in Jakarta, as in Experiments 1 and 2 there was no difference between the Milo condition and the Kellogg's condition (4-year-olds, $p = 0.63$; 5-year-olds, $p = 0.63$; 6-year-olds, $p = 0.65$, and 7-year-olds, $p = 0.65$) and therefore these two conditions were combined.

Age	Experimental group (n = 20)
4-year-olds	30 %
5-year-olds	30 %
6-year-olds	40 %
7-year-olds	40 %
All children	35 %

Table 5.1. Percentage of children who went to the shop in Experiment 3, chance was 20%.

Using Fisher test (2-tailed), the four age groups were compared. We found that there were no significant differences between the four age groups in

understanding the relation between the shop model and the advertisement, p = 1 (4 vs. 5 years), p = 0.74 (4 vs. 6 years), p = 0.74 (4 vs. 7 years), p = 0.74 (5 vs. 6 years), p = 0.74 (5 vs. 7 years), and p = 1 (6 vs. 7 years).

There were no differences between Experiment 3 and Experiment 2: p = 1 (4 years), p = 0.72 (5 years), p = 0.31 (6 years), and p = 1 (7 years). In other words, there was no difference between children in Indonesia and in the UK. We also compared the Indonesian children with the UK children in Experiment 1. There were no differences: p = 0.23 (5 years), p = 0.15 (6 years), and p = 0.15 (7 years).

As explained in chapter 3 (page 71) performance (for an age group) was significantly better than chance (binomial distribution, $p < .05$) if the percentage of children choosing the shop was 40% or more. As shown in table 5.1 both the 6- and 7-year-olds performed better than chance. This contrasted with the performance of the UK 6- and 7-year-olds in Experiments 1 and 2 who were no better than chance. Nonetheless, as shown above when we compared children in Indonesia with children in the UK there were no significant differences. This may be because although the 6-and 7-year-olds were better than chance their performance was still only at 40%, which was only slightly better than the performance of the UK children in the previous experiments.

Table 5.2 shows the percentage of children in the experimental condition who went to the models other than the shop

		KITCHEN	SITTING ROOM	DINNING ROOM	GARDEN
AGE 4	EXP (N = 20)	15 %	30 %	10 %	15 %
AGE 5	EXP (N = 20)	20 %	10 %	15 %	25 %
AGE 6	EXP (N = 20)	20 %	10 %	0 %	30 %
AGE 7	EXP (N = 20)	10 %	15 %	15 %	20 %

Table 5.2. Percentage of children in age group who went to other models Experiment 3.

As explained in Chapter 3 (page 71), for age group to performance was better than chance (binomial distribution, $p < .05$) if 40% or more of the children choose the kitchen, sitting room, dining room, or garden ($p < .05$). Therefore none of the age groups performed better than chance expectations in the experimental condition.

5.5.2 Verbal task

Children were asked explain verbally why they choose the model. If a child picked (for example) a shop and verbally explained 'to get the product' or 'to buy the product' this demonstrates that the child understands the relationship between the shop and advertisement. The results for each age group are presented in Tables 5.3 to 5.6.

AGE 4	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	5%	5%	0%	0%	0%
To inform	0%	10%	0%	0%	0%
To eat/drink/cook	10%	5%	5%	5%	0%
To watch/to sit/where telly is	0%	5%	5%	0%	5%
To play	0%	0%	0%	0%	0%
Don't know/ Don't answer/ Don't make sense	0%	5%	20%	5%	10%

Table 5.3. 4-year-olds responses to the question "Why do you choose this model?" in Experiment 3.

AGE 5	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	0%	10%	0%	0%	0%
To inform	0%	0%	0%	0%	0%
To eat/drink/cook	5%	0%	0%	10%	5%
To watch/to sit/where telly is	0%	0%	0%	0%	5%
To play	0%	0%	0%	0%	5%
Don't know/ Don't answer/ Don't make sense	15%	20%	5%	10%	10%

Table 5.4. 5-year-olds responses to the question "Why do you choose this model?" in Experiment 3.

AGE 6	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy/to sell	0%	20%	0%	0%	0%
To inform	0%	0%	0%	0%	0%
To eat/drink/cook	20%	0%	0%	0%	5%
To watch/to sit/where telly is	0%	0%	10%	0%	5%
To play	0%	0%	0%	0%	5%
Don't know/ Don't answer/ Don't make sense	0%	20%	0%	0%	15%

Table 5.5. 6-year-olds responses to the question "Why do you choose this model?" in Experiment 3.

AGE 7	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	0%	25%	0%	0%	0%
To inform	0%	5%	0%	0%	0%
To eat/drink/cook	0%	0%	5%	10%	0%
To watch/to sit/where telly is	5%	0%	5%	0%	0%
To play	0%	0%	0%	0%	5%
Don't know/ Don't answer/ Don't make sense	5%	10%	5%	5%	15%

Table 5.6. 7-year-olds responses to the question "Why do you choose this model?" in Experiment 3.

Only 5% of the 4-year-olds, 10% of the 5-year-olds, 20% of the 6-year-olds, and 25% of the 7-year-olds said anything that indicated an understanding of the relationship between shopping and the advertisement they had seen.

Children in Indonesia also were asked the three questions (page 73) about advertisements and the children's answers were coded as in Experiments 1 and 2 (see table 5.7). Inter-rated reliability was 95%.

	4-year-olds	5-year-olds	6-year-olds	7-year-olds
Don't know	65%	95%	85%	45%
For a break	35%	5%	15%	15%
To inform	0%	0%	0%	35%
To persuade	0%	0%	0%	5%

Table 5.7. Children's responses to the three questions regarding the purpose of advertising in Experiment 3.

Far fewer Indonesian children referred to persuasive intent than did children in the UK. In the UK a few children in each age group mentioned that advertisements are to persuade people to buy things. In the UK 50% of the 7-year-olds in Experiment 1 and 45% of the 7-year-olds in Experiment 2 were aware of persuasive intent. In contrast, almost none of the children in Indonesia said anything that could be interpreted as an understanding of persuasive intent, and only 5% of the Indonesian 7-year-olds showed an understanding of advertisements. The majority of children in all age groups in Indonesia either did not know the purpose of advertisements, or just said that advertisements were for a break (see table 5.7). We could not compare the performance of the Indonesian children in the verbal and the non-verbal tasks because so few referred to persuasive intent.

As in Experiments 1 and 2, we compared children in verbal and non-verbal task using Fisher tests (2-tailed) and we found there was no relationship between understanding persuasive intent in the verbal task and going to the shop in the non-verbal task ($p = 0.35$). There was no relationship between understanding persuasive and informational intent in the verbal task and going to the shop ($p = 0.44$).

Children in Indonesia were also asked 'Who makes adverts?' and their responses were coded in the same way as in Experiments 1 and 2.

	4-year-olds	5-year-olds	6-year-olds	7-year-olds
Don't know	100 %	95 %	100 %	100 %
'Shop'	0 %	0 %	0 %	0 %
Advertisers/name of the shop	0 %	0 %	0 %	0 %
Companies	0 %	5 %	0 %	0 %

Table 5.8. Children's responses to the question about who makes advertisements in Experiment 3.

The Indonesian children did not know who made advertisements. All except one of the children said 'don't know' (see Table 5.8). Although the UK children in Experiments 1 and 2 gave very few appropriate answers to this question (tables 3.4. and 4.4) the UK children did give a greater variety of answers than the children in Indonesia. The children in the UK may have had (slightly) more understanding about who makes advertisements than the Indonesian children. Alternatively the children in the UK may have been guessing at the answer, but the Indonesian children may have been more cautious and simply said 'don't know' to this question.

5.6 Discussion

The Indonesian children in Experiment 3 performed poorly in the non-verbal task. Although the two oldest age groups (6- and 7-year-olds) did perform better than chance, their performance was at only 40% correct. In other words, the majority of the 6- and 7-year-olds did not go to the shop model in response to the television advertisement. The 40% performance is contrast to the claims from previous researchers who have included 6- and 7-year-olds and have claimed that about two-thirds or more of children at these ages can succeed in non-verbal tasks (Bijmolt et al., 1998; Owen et al., 2007), though we pointed in chapter 1 (pages 29-30), the proportions reported by previous researchers may not be valid. In Experiment 3 the younger children (4- and 5-year-olds) performed at chance and there was no evidence that these children choose the shop model rather than the other models, and therefore there was no support for previous researchers who

have claimed that such young children can relate an advertisement to going to a shop (Donohue et al., 1980; Macklin, 1987).

When responding to the verbal questions hardly any of the Indonesian children referred to persuasive intent. As noted above, this was in contrast to the older UK children, because by the age of 7 years about half the UK children in Experiments 1 and 2 referred to persuasive intent. Kunkel et al. (2004) reviewed all the Western research and concluded that an awareness of persuasive intent develops about 7 or 8 years. Therefore the lack of 7-year-olds in Indonesia who referred to persuasive intent suggests that Indonesian children have less understanding than Western children. Chan and McNeal (2004) suggested that children in countries with limited regulation might even have a better awareness of advertisements than children in Western countries where television advertising is well controlled. If this was the case we expected the children in Indonesia to perform as well as, or even better, than the UK children in Experiments 1 and 2. But we found the Indonesian children performed less well. The findings from the verbal task was therefore unexpected, and further research in Indonesia, and other non-Western countries, would be useful to find out if the age that Western children achieve an understanding of persuasive intent also applies in other countries.

The most important result in Experiment 3 was that the Indonesian children were poor in the non-verbal task, and there was no difference between the Indonesian children and the UK children in Experiments 1 and 2. Therefore Experiment 3 confirmed the previous studies by showing that the non-verbal task did not indicate any early knowledge of advertising.

In Experiments 1 to 3 the instructions were the same as used by Macklin (1987). After the children had seen the advertisement (Kellogg's or Milo) on the television they were asked: "Now that was an advert. What does it want the doll to do? Can you look at the models again and show me where the advert wants the doll to go to?". We considered that the wording might be too precise and that some children might have interpreted the question to ask what the specific

Kellogg's or Milo advertisement wanted them to do. It was possible that some children interpreted this question to mean the doll should go to the kitchen model to get cereal or milk, or go to the dining room to eat/drink it. If this happened it would have reduced the proportion of children going to the shop model. Therefore, in Experiment 4 we changed the instructions to investigate whether the type of instruction could influence children's performance in the non-verbal task.

CHAPTER 6

EXPERIMENTS 4a and 4b

6.1 Introduction

Small differences in the wording of questions can influence children's performance. For example, Donaldson (1978) showed that altering just one word of an instruction could have a major effect on children's success in Piagetian tasks. Owen et al. (2007) suggested, with reference to advertising tasks, that factors like the wording of a question or instruction could have a significant effect on children's performance. Waterman, Blades and Spencer (2000) showed that even when the words of a question were changed so that the question no longer made sense, children still (incorrectly) attempted to answer the question. The children did so by re-interpreting the question and guessing at the meaning, and very rarely said that the question was nonsense or that they did not understand it. None of the children in Experiments 1 to 3 explicitly said they did not know where to go when asked to take a doll to one of the models but as Waterman et al found, the fact that a child responds to an instruction does not necessarily mean they understand the question. As discussed at the end of the previous chapter the instructions that were used in Experiments 1-3 could have been ambiguous and therefore in this chapter we describe an experiment in which we tried to use less ambiguous instructions.

The wording of the instructions used in Experiments 1-3 was very similar to the wording used in the original non-verbal experiments (Macklin, 1987) to replicate previous research as closely as possible. Nonetheless, as explained in chapter 5, the instructions referred to the specific advertisement that the children had just been shown (Kellogg's or Milo). Some children might have thought that the doll in the non-verbal task should look for, or go to eat, the specific product they had just seen. In which case some children may have thought that going to one of the models other than the shop was an appropriate response.

In Experiments 4a and 4b we changed the wording of the instructions. Participants were told: "Now that was an example of an advert. In general what does the advert want the doll to do? Can you look at the models again and show me where adverts in general want the doll to go to?" In contrast to the instructions used in Experiments 1-3 these revised instructions placed more emphasis on advertisements in general, rather than on the advertisement they had just seen. In Experiments 4a and 4b we used the same procedure as in Experiment 2 (i.e. the verbal task was given first). The only difference between Experiment 2 and Experiment 4a and 4b was the change in instructions.

6.2 Experiment 4a

In Experiment 4a we carried out a study with adults. In Experiments 1-3 we had only included children (up to the age of 8 years), but it is also important to check that the task made sense to an adult, and that adults would choose the shop model in response to the instructions.

6.2.1 Participant

Thirty-six adults aged 18 years 0 months to 19 years 11 months took part in Experiment 4a. The adults were all undergraduate students. The participants were recruited from a University Department of Psychology and received course credits for taking part. Half the adults were shown the Kellogg's advertisement and the other half saw the Milo advertisement.

6.2.2 Procedure

The procedure was the same as in Experiment 2 (i.e. the adults received the verbal tasks before the non-verbal task), But instead of using the instructions used in Experiments 1-3 (see page 69), after showing the advertisements, the experimenter said, "Now that was an example of an advert. In general what does the advert want the doll to do? Can you look at the models again and show me where adverts in general want the doll to go to?". As in Experiments 1-3 if a

participant did not do anything then the experimenter used a prompt. The prompt was also altered to emphasise advertisements in general: "You can take the doll to any of the models. Which one does an advert in general want the doll to go to?".

6.2.3 Results

In Experiment 4a we found that 32 of the 36 adults (89%) went to the shop model. The high proportion of participants completing the non-verbal task as expected showed that the adults interpreted the instructions to mean that they should take the doll to the shop. In response to the verbal questions about advertising, all the adults, without exception referred to persuasive intent. In answer to the question about who makes advertisements all the adults referred to companies or businesses that want to sell products. The performance of the participants in Experiment 4a demonstrated that the task made sense to adults and that they interpreted the non-verbal task as we had expected.

In Experiment 4b we went on to test children with the same instructions as Experiment 4a.

6.3 Experiment 4b

6.3.1 Participants

Experiment 4b included 29 UK children aged 5 and 6 years. There were two groups with a mean age of 5 years 2 months (range 5.0-5.11), and 6 years 4 months (range 6.0-6.11). The children were recruited from a middle class school. Half the children in each age group saw the Kellogg's advertisement and half saw the Milo advertisement.

6.3.2 Main hypothesis

The hypothesis for Experiment 4b was that if the instructions had an effect on children's non-verbal performance we expected children in Experiment 4 (with

the revised instructions) would perform differently from the children in Experiment 2 (who had the original instructions).

6.3.3 Materials and Procedure

The procedure and materials were exactly the same as in Experiment 2, except that the wording of the instructions in the non-verbal task was changed.

6.3.4 Results

6.3.4.1 Non-verbal task

The results of Experiment 4b were analyzed in the same way as in the previous experiments. As in previous experiments we did not find any significant differences between the Milo and Kellogg's condition (Fisher tests: 5-year-olds, $p = 1$; 6-year-olds, $p = 1$) and so these were combined. The percentage of children who chose the shop model is shown in Table 6.1.

	Percentage choosing shop model
5-year-olds	23 %
6-year-olds	25 %
All children	24 %

Table 6.1. Percentage of children who went to the shop in Experiment 4b. Chance was 20%.

Table 6.2 shows the percentage of children in the experiment 4 who went to models other than shop.

		KITCHEN	SITTING ROOM	DINNING ROOM	GARDEN
AGE 5	EXP (N = 13)	8 %	39 %	15 %	15 %
AGE 6	EXP (N =16)	13 %	31 %	0 %	31 %

Table 6.2. Percentage of children in age group who went to other models Experiment 4b.

In choosing 1 of 5 models there was a 0.2 chance of children choosing the model kitchen, sitting room, dining room, shop or garden by guessing. In the experimental group there were 13 5-year-olds and 16 6-year-olds. From the binomial distribution (n = 13) the probability of 6 or more children in one age group choosing one of the models was 0.02, and the probability of 5 or more children choosing one of the models was 0.07. Therefore we considered performance was better than chance only if 6 or more children (i.e. 46% or more) in the group chose one of five models ($p < .05$). While the binomial distribution for n = 16, the probability of 7 or more children in choosing one of the models was 0.02, and the probability of 6 or more children choosing one of the models was 0.06. We considered performance was better than chance only if 7 or more children (i.e. 44%% or more) in the group chose one of five models ($p < .05$). Hence, from the table above, none of the age groups chose any particular control (i.e., not shop) room more frequently than would be expected by chance.

A Fisher (2-tailed) test showed that there was no difference between the 5-year-olds and the 6-year-olds ($p = 1$). There were no significant differences between children in Experiment 4b and Experiment 1: $p = 0.36$ (5-year-olds) and $p = 0.67$ (6-year-olds). There were no differences between Experiment 4b and Experiment 2: $p = 1$ (5-year-olds) and $p = 1$ (6-year-olds). Neither age group performed better than chance expectations.

Even though the wording was changed in Experiment 4b, the children's performance was no better than in previous experiments. Therefore the hypothesis was not supported. Changing the instructions did not result in a change of performance.

6.3.4.2 Verbal task

As in Chapter 5 (page 95), children were asked to give the reason why they choose the particular model room they did.

AGE 5	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	8%	8%	0%	0%	0%
To inform	0%	0%	0%	0%	0%
To eat/drink/cook	0%	0%	0%	15%	0%
To watch/to sit/where telly is	0%	0%	38%	0%	0%
To play	0%	0%	0%	0%	8%
Don't know/ Don't answer/ Don't make sense	0%	15%	0%	0%	8%

Table 6.3. 5-year-olds responses to the question "Why do you choose this model?" in Experiment 4b.

AGE 6	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	0%	25%	0%	0%	0%
To inform	0%	0%	0%	0%	0%
To eat/drink/cook	13%	0%	6%	0%	0%
To watch/to sit/where telly is	0%	0%	19%	0%	0%
To play	0%	0%	0%	0%	0%
Don't know/ Don't answer/ Don't make sense	0%		6%	0%	31%

Table 6.4. 6-year-olds responses to the question "Why do you choose this model?" in Experiment 4b.

Table 6.3 and 6.4 do not give any indication that children were choosing a particular model because they were associating what the advertisement showed with a room. Only 6-year-olds choose the kitchen more often than expected by chance, and this may have been because the advertisements included children eating and drinking in the kitchen. Of the 6-year-olds only 25% of those who choose the shop indicated that the advertisement wanted the doll to go the shop to buy the product.

In Experiment 4b, children were also asked the verbal questions that were used in Experiments 1-3, and were scored in the same way (see table 6.5). Inter-rater reliability was 97%.

	5-year-olds	6-year-olds
Don't know	23 %	25 %
For a break/to amuse	39 %	19 %
To inform	23 %	19 %
To persuade	15 %	37 %

Table 6.5. Children's responses to the question about the purpose of advertising in Experiment 4b.

The percentage of 5-year-olds in Experiment 4b who indicated an understanding of persuasive intent was similar to the percentages of 5-year-olds doing so in the previous experiments with UK children: 15% (Expt 1), 25% (Expt 2) and 15% (Expt 4b). Slightly more 6-year-olds in Experiment 4b showed a knowledge of persuasive intent: 25% (Expt 1), 15% (Expt 2) and 37% (Expt 4b). The children's performance on the verbal and non-verbal tasks was compared as in Experiment 1. There was no relationship between the children who recognized persuasive intent in the verbal task and who went to the shop in the non-verbal task (Fisher test, 2-tailed, $p = .36$), and there was no relationship between those children who understood either persuasive intent and informational intent, and those who went the shop (Fisher test, 2-tailed, $p = 1$),

Children's answers to the question "Who makes adverts?" were also scored as in Experiment 1 (see table 6.6).

	5-year-olds	6-year-olds
Don't know	100 %	100 %
"Shop"	0 %	0 %
Advertiser/name of shop	0 %	0 %
Companies	0 %	0 %

Table 6.6. Children's responses to the question about who makes advertisements in Experiment 4b.

None of the 5- or 6-year-olds in Experiment 4b gave an appropriate response to this question about who makes advertisements. The performance of the children on this question was similar to the poor performance of 5- and 6-year-olds in Experiments 1 and 2 (see tables 3.4 and 4.4) because almost none of the children in these age groups were able to answer the question.

6.4 Discussion

The hypothesis, that changing the instructions would affect children's responses in the non-verbal task was not supported, because there was no difference in the performance of children in Experiment 4b and the previous experiments with UK children. Therefore, the greater emphasis in Experiment 4b on advertisements in general (rather than on the specific advertisement that the children had been shown) did not result in more of the children choosing the model of the shop.

In Experiment 4a we tested a group of adults to confirm that adults performed the non-verbal task as expected, and nearly all the adults went to the shop. In other words, the children in Experiment 4b, and the children in Experiments 1-3 all performed differently from the adults in Experiment 4a. None of the children in these experiments approached the adult level of performance.

Even the largest percentage of any age group going to the shop (40%) in any of Experiments 1-4 was far below the performance of the adults in Experiment 4b (nearly 90%).

Most of the children in Experiments 1 to 3 and 4b performed no better than chance in the non-verbal task, and this does not support claims by previous researchers that young children can demonstrate an understanding of advertisements if they have the chance to express their knowledge in a non-verbal task (Bijmolt et al., 1998; Donohue et al., 1980; Macklin, 1985; 1987; Owen et al., 2007). We have argued that the difference between previous results and our results was because Experiments 1-4 included methods and controls that were omitted by previous researchers, and we will consider these points again at the end of chapter 7.

CHAPTER 7

EXPERIMENT 5

7.1 Introduction

As discussed in chapters 1 and 2 food is the most commonly advertised product to children (Byrd-Bredbenner, 2002; Lewis & Hill, 1998; Roberts & Pettigrew, 2007), but children also see many advertisements for toys (Barcus, 1980; Lewis & Hill, 1998). Toy advertisements may have a particular appeal for children and younger children (Kline, 1993) and toys are the most common product asked for by children (Buijzen and Valkenburg, 2000) especially at Christmas time (Pine et al., 2007; Pine & Nash, 2002).

Previous researchers who have argued that young children demonstrate an understanding of advertisements in non-verbal tasks have (with one exception, Ballard-Campbell, 1983) all included food advertisements (Bijmolt et al., 1998; Donohue et al., 1980; Macklin, 1985; 1987; Owen et al., 2007). Experiments 1 to 3 and 4b did not support the findings of previous researchers. Nonetheless if there is any validity in the claim that young children can succeed in non-verbal tasks, that claim should apply to all non-verbal tasks, irrespective of the product that is shown to the children. Therefore in Experiment 5 we repeated our previous studies, but rather than use food advertisements we included an advertisement for a toy.

The only previous researcher to use a toy advertisement in a non-verbal task was Ballard-Campbell (1983) who showed 4- and 6-year-olds two toy advertisements. The children were then asked to choose a photograph from various scenes, including a shopping scene. Ballard-Campbell found that children were no better than chance in choosing the shopping scene.

7.2 Main hypothesis

Considering our previous findings and Ballard-Campbell's results, we predicted that children would still perform poorly in the non-verbal task in Experiment 5.

7.3 Participants

Thirty children from the UK took part in Experiment 5. There were 15 5-year-olds with a mean age of 5 years 4 months (range 5.0-5.11), and 15 6-year-olds with a mean age of 6 years 4 months (range 6.0-6.11). The children were mostly from middle class backgrounds.

7.4 Materials and Procedure

The procedure of Experiment 5 was the same as in Experiment 4b. However, in Experiment 5 the children were shown a toy advertisement.

One unfamiliar advertisement was used in the study. A 30 second advertisement from the United States was used. The advertisement was for a yo-yo. The children had not seen the advertisement before and the yo-yo product was not available in UK shops.

The advertisement started with a boy playing with a yo-yo. Then another boy and girl show up. They all play yo-yo together. Each of the children plays with the yo-yo in different ways. In the middle of the advertisement the product is shown in close-up, and a voice-over says that the yoyo is different from a regular yo-yo, because it has time on it, it lights up when played, and it shows the speed of movement. The children are shown obviously enjoying playing with the toy. At the end of the advertisement, a close-up of the product is shown again.

The same model rooms were used as in Experiments 1-4, but instead of food products, each room included a miniature representation of a yo-yo.

7.5 Results

7.5.1 Non-verbal task

Experiment 5 was analyzed in the same way as previous experiments. Table 7.1 shows the percentage of children who chose the shop model in the non-verbal task.

	Experimental group (n = 15)
5-year-olds	40 %
6-year-olds	53 %
All children	47 %

Table 7.1. Percentage of children who chose the shop in Experiment 5. Chance was 20%.

A Fisher test (2-tailed) was used to compare the two age groups. There was no significant difference between the two groups in choosing the shop ($p = 0.72$). As the shop was 1 of 5 models, the chance was 0.2 of children choosing the model shop by guessing. The number of participant in experimental group was 15. The Binomial probability of 6 or more children choosing the shop was 0.06, and the probability of 5 or more children choosing the shop was 0.16. Therefore, we consider performance was better than chance only if 6 or more (i.e. 40% or more) in the group chose the shop ($p < .05$) and therefore both the 5-year-olds and the 6-year-olds performed better than chance expectations.

Table 7.2 shows percentage of children's responses in choosing models other than the shop

		KITCHEN	SITTING ROOM	DINNING ROOM	GARDEN
AGE 5	EXP (N = 15)	0 %	34 %	13 %	13 %
AGE 6	EXP (N = 15)	7 %	33 %	0 %	7 %

Table 7.2. Percentages of children in age group who went to others model in Experiment 5.

As earlier (page 113) performance was better than chance (binomial distribution, $p < .05$) if the percentage of children choosing one of the models was 40% or more. Therefore, none of the other age groups in experimental groups went to any of the control rooms more often than would be expected by chance.

We compared children's performance in Experiment 5 with children in Experiment 4b. There were no significant differences between children's performance in Experiment 5 and Experiment 4b: $p = 0.43$ (5-year-olds), $p = 0.15$ (6-year-olds). We also compared children's performances in Experiment 5 with children in Experiment 2 and found no differences $p = 0.27$ (5-year-olds) and $p = 0.07$ (6-year-olds).

7.5.2 Verbal task

Children were asked to explain why they picked that particular model room. These results are shown as a function of age in Table 7.3 and 7.4.

AGE 5	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	0%	20%	0%	0%	0%
To inform	0%	13%	0%	0%	0%
To eat/drink/cook	0%	0%	0%	0%	0%
To watch/to sit/where telly is	0%	0%	20%	13%	0%
To play	0%	0%	0%	0%	13%
Don't know/ Don't answer/ Don't make sense	0%	7%	7%	7%	0%

Table 7.3. 5-year-olds responses to the question "Why do you choose this model?" in Experiment 5.

AGE 6	Kitchen	Shop	Sitting Room	Dining Room	Garden
To buy	7%	46%	0%	0%	0%
To inform	0%	0%	0%	0%	0%
To eat/drink/cook	0%	0%	0%	0%	0%
To watch/to sit/ where telly is	0%	0%	26%	0%	0%
To play	0%	0%	0%	0%	7%
Don't know/ Don't answer/ Don't make sense	0%	7%	7%	0%	0%

Table 7.4. 6-year-olds responses to the question "Why do you choose this model?" in Experiment 5.

Only 20% of 5-year-olds and 46% of 6-year-olds who picked the shop also provided the correct answer for why they had chosen it.

Children were asked the three questions about advertising, as used in Experiment 1, and children's responses were coded as in that experiment (see table 7.5). Inter-rated reliability was 98%. The percentage of children who

referred to persuasive intent in Experiment 5 was similar to the percentage in the previous experiments with UK children (Experiments 1-2 and 4b). In those experiments 15% to 25% of the 5-year-olds and 15% to 37% of the 6-year-olds referred to persuasive intent.

	5-year-olds (n = 15)	6-year-olds (n = 15)
Don't know	13 %	20 %
For a break/ to amuse	54 %	26 %
To inform	20 %	27 %
To persuade	13 %	27 %

Table 7.5. Children's responses to the questions about the purpose of advertising in Experiment 5.

We compared children's performance on the verbal and non-verbal task using a Fisher test (2-tailed) and we found there is no relationship between children who referred to persuasive intent in the verbal task and children who went to the shop in the non-verbal task ($p = 1$). There was no relationship between children who understood persuasive and informational intent and those who went to the shop ($p = 0.27$).

We also asked the question about who makes advertisements and these were coded as in Experiment 1 (see table 7.6). The 5- and 6-year-olds in Experiment 5, like children of the same ages in the previous experiments, were mostly unable to explain who made advertisements, because only 2 of the 6-year-olds gave an appropriate answer.

	5-year-olds n = 15	6-year-olds n = 15
Don't know	100 %	87 %
"Shop"	0 %	0 %
Advertiser/name of the shop	0 %	0 %
Companies	0 %	13 %

Table 7.6. Children's responses to the question about who makes advertisements in Experiment 5.

7.6 Discussion

In Experiment 5 the procedure was the same as in Experiment 4b, but instead of including food products children were show an advertisement for a toy yo-yo before they were asked to choose one of the models. In contrast to the previous experiments with food advertisements, the 5- and 6-year-olds in Experiment 5 did perform better than chance in the non-verbal task. Therefore this did not support our hypothesis that children in Experiment 5 would also perform at chance.

With the exception of the 6-year-old Indonesian children in Experiment 3 (40% of whom chose the shop), all the 5- and 6-year-olds who saw the food advertisements performed at chance. But in Experiment 5, with the toys, 40% of the 5-year-olds and 53% of the 6-year-olds chose the shop. This contrasts with Ballard-Campbell (1983) who also used a toy in a non-verbal task, but found that young children did not choose a shopping photograph any better than chance. Despite the better than chance performance in Experiment 5, there was no significant difference between the age groups in Experiment 5 and the equivalent age groups in either Experiment 4b or Experiment 2. In both Experiments 2 and 4b the children had been shown a food advertisement and had performed at chance levels. Although the 5- and 6-year olds in Experiment 5 were better than chance less than half the 5-year-olds and only just over half the 6-year-olds went to the shop. This low level of performance is probably why the children in

Experiment 5 were not significantly better than the children in earlier experiments.

We do not know why the children were a little more likely to go to the shop when they were shown a toy advertisement, and future research could investigate whether children perform differently in non-verbal tasks, depending on the type of product that is included in the experiment. It is possible that when children are asked where a food advertisement wants them to go some children associate the advertisement with getting the food (e.g. from the kitchen) or eating the food (e.g. in the dining room) and so they choose rooms other than the shop model. We therefore examined the data from Experiments 1-3 and 4b to see if children who did not go to the shop showed any bias in going to the kitchen or the dining room, but there was no evidence that children in those experiments chose either the kitchen or dining room in preference to the other rooms.

7.7 General discussion of Experiments 1-5

Although there has been general agreement that children's understanding of persuasive intent develops after 7 or 8 years of age (Gunter et al., 2005; Kunkel et al., 2004), nearly all the research into children's understanding of advertising has been based on studies in which children have been interviewed or have taken part in focus groups - in other words, by using verbal methods.

A small number of researchers have used non-verbal methods to measure children's understanding of advertising (Ballard-Campbell, 1983; Bijmolt et al., 1998; Donohue et al., 1980; Macklin, 1985; 1987; Owen et al., 2007). With the single exception of Ballard-Campbell all the researchers using non-verbal tasks have claimed that children can succeed on non-verbal tasks at an age that is earlier than they can succeed on verbal tasks. There are two issues related to the use of non-verbal tasks. The first is the issue of what it means when children succeed on a non-verbal task, and the second issue is whether children's performance on a

non-verbal task is affected by methodological problems. We will discuss these two issues in turn.

Donohue et al. (1980) and Bijmolt et al. (1998) both claimed that if children pointed to a shopping picture in a non-verbal task it indicated that the child had an understanding of persuasive intent. This claim was not supported by the results of our experiments. In each experiment we investigated whether there was a relationship between the children who went to the shop model in the non-verbal task, and the children who responded to the verbal questions with some reference to persuasive intent. In none of the five experiments with children was there any such relationship. In other words, children who were able to express an awareness of persuasive intent were no more likely to choose the shop than children who had no understanding of persuasive intent. Therefore, there was no evidence that success in the non-verbal model task in Experiments 1 to 5 indicated an understanding of persuasive intent.

In contrast to Donohue et al. (1980) and Bijmolt et al. (1998), Macklin (1985; 1987) argued if children chose a picture of a shop it indicated only that children realized that an advertisement was telling them what was in a shop. In which case success on a non-verbal picture task was measure of understanding informational intent, rather than persuasive intent. However, this suggestion was not supported by our analysis. In Experiments 1-5 we compared the children who referred to informational intent in the verbal task [that is all the children who mentioned informational *and* persuasive intent] with the children who chose the shop in the model task. In none of the experiments was there any indication that the children who verbally expressed informational intent were more likely to choose the shop than children who did not express an awareness of informational intent.

Therefore we found no relationship between performance on the verbal task and the non-verbal task in our experiments. Children who performed well on one task did not necessarily perform well on the other. We therefore conclude that the non-verbal tasks that have been used by previous researchers may not indicate

either persuasive intent, as claimed by Donohue et al. (1980) and Bijmolt et al. (1998) or indicate informational intent as suggested by Macklin (1987). In which case conclusions drawn from non-verbal tasks need to be treated with caution because it is not clear what a non-verbal task is measuring.

The second issue relates to the methodological problems with previous non-verbal studies. As pointed out in chapter 1 (pages 26-30) the ways that previous non-verbal studies were designed may have resulted in children being successful for reasons that were not necessarily related to their understanding of advertising. For example, in one study the 'correct' picture of the shop was the first picture shown on a page of pictures (Macklin, 1987), and in some studies the picture of the shop was the only one to include the product that children had seen in the television advertisement which could have made the choice of picture a simple association between the product on the television and the product in the picture (Donohue et al., 1980; Macklin, 1985). As we have discussed in chapters 1 and 3 previous researchers made no attempt to make sure that all the pictures in their non-verbal tasks were equally attractive to the children, and therefore the choice of the shopping picture may have been the result of it being the most attractive of the choices and not because it represented any understanding of advertising. We tried to overcome all these limitations in the design of our experiments. Having removed all the factors that may have positively influenced children's performance we found little evidence (in Experiments 1-5) that children's selection of the shop model in our studies was much better than chance.

Some researchers have claimed that children performed better than chance in their non-verbal tasks, though it is not clear from the data presented in their papers that the children's performance was actually better than chance. This is the case for the picture tasks used by Bijmolt et al. (1998) and Owen et al. (2007), and for the room task used by Macklin (1987). Only one study included an explicit comparison with chance, showing that 5-year-olds performed better than chance in a non-verbal picture task (Macklin, 1987) and only one study included enough data so that chance can be calculated (Donohue et al., 1980) and this calculation showed that 3- to 6-year-olds did perform better than chance. However, as noted

in the previous paragraph it is these last two studies in particular that have methodological limitations.

	Expt 1 Non-verbal then verbal food ads UK	Expt 2 Verbal then non-verbal food ads UK	Expt 3 Verbal then non-verbal food ads Indonesia	Expt 4b Verbal then non-verbal food ads UK	Expt 5 Verbal then non-verbal toy ad UK
4-year-olds	----	30%	30%	----	----
5-year-olds	10%	20%	30%	23%	40%
6-year-olds	15%	20%	40%	25%	53%
7-year-olds	15%	35%	40%	----	----
8-year-olds	----	44%	----	----	----

Table 7.7. Percentage of each age group choosing the shop in the non-verbal task. Chance was 20%. Children performed significantly better than chance ($p < .05$) if the percentage was 40% or more.

We include a summary of the results from all 5 of our experiments in table 7.7. Overall our experiments provide little support for the claims made by Donohue et al. (1980) and by Macklin (1987) that very young children are successful in a non-verbal task. Donohue et al. claimed that 3- to 6-year-olds performed better than chance in their study, and Macklin claimed that 5-year-olds performed better than chance in a non-verbal task. But we found no evidence that the youngest children in our experiments, the 4-year-olds, performed better than chance, and in only 1 out of 5 experiments (in Experiment 5) did we find that 5-year-olds were better than chance. Therefore the idea that very young children have an understanding of advertisements that they cannot explain in verbal tasks, but can demonstrate in non-verbal tasks is not supported by the results from our experiments.

The studies by Bijmolt et al. (1998) and Owen et al. (2007) included older children, and both groups of researchers claimed children at 7 years of age (Owen

et al.) or at 8 years of age (Bijmolt et al.) could perform a non-verbal task successfully. We have already discussed the limitations of both these studies, and pointed out that these claims may not be valid given the data presented in the papers by Bijmolt et al. and Owen et al. As can be seen from table 7.7 our experiments give only limited support to the claim that 7- and 8-year-olds succeed in non-verbal tasks. In only 1 out of 3 of our experiments did the 7-year-olds perform better than chance. The 8-year-olds in Experiment 2 were better than chance, but even so less than half the 8-year-olds went to the shop. The age of 7 to 8 years is the age when children's understanding of persuasive intent is developing (Gunter et al., 2005; Kunkel et al., 2004) and we found, at least for the UK children, that nearly half the 7-year-olds (in Experiments 1 and 2) and most of the 8-9-year-olds (in Experiment 2) referred to persuasive intent in the verbal task. Therefore these age groups might be expected to perform successfully in any task related to understanding advertisements, and so their low level of success on the non-verbal task was unexpected. This return to the point we made above, that performance in a non-verbal task may not be closely related to children's understanding of advertisements.

In summary, contrary to the claims of previous researchers, we found no evidence in Experiments 1-5 that children performed better on a non-verbal task than a verbal one. We also failed to find any evidence that very young children could demonstrate an understanding of advertising in a non-verbal task. We suggest that the non-verbal tasks used by previous researchers included methods that were not valid. In particular, previous researchers never checked that the pictures or models they have used in non-verbal tasks were all equally attractive to young children, and we suggest that in some studies the target picture or model (usually a shop or a shopping scene) was the most attractive of the choices offered to participants. Children may therefore have chosen the correct picture for that reason rather than because they understood the relationship between an advertisement and going to a shop.

In Experiments 3, 4, and 5, we asked children to provide the reason why they choose the particular model in the non-verbal task. Overall, children's

responses did not indicate an understanding of the relationship between shopping and advertisements. If children understand the relationship between shopping and advertisements then they would pick the shop and answer correctly that the shop wanted the doll to go to buy the product (Milo, Kellogg's and Yoyo). Only 6-year-olds in Experiment 5 who picked the shop answered appropriately. If children are associating the advertisements with an activity (i.e. to eat or to drink) then when they were shown Milo or Kellogg's advertisement they would more likely to pick the kitchen or the dining room because kitchen and dining room are usually the places for eating or drinking. However, some children chose other models such as garden or sitting room. We found the same result in Experiment 6, children who watched toy advertisement would go to the garden or sitting to play, but some children also chose kitchen or dining room. These results suggest that children do not have a well-developed understanding of the purpose of advertisements at these ages.

We found no evidence from non-verbal tasks that young children have an understanding of advertising, and no reason to think that children have an awareness of persuasive intent any earlier than has been demonstrated in verbal tasks (i.e. about 7 or 8 years of age). This means that there is also no reason to change the conclusions or recommendations that have been made by researchers, like Kunkel et al. (2004) who have reviewed the literature on verbal tasks. Kunkel et al. suggested a ban on advertising that was aimed at children who were 8-years-old or younger. In contrast to Kunkel et al's suggestion, marketers have emphasised children's apparent success in previous non-verbal tasks as a way of justifying advertising aimed at younger children. But as we have shown in Experiments 1-5 previous non-verbal tasks have not been an appropriate way to assess young children's understanding of advertisements.

As noted in Chapter 1, most of the research done to investigate children's understanding of advertisements has been about television advertisements, and in Experiments 1-5 we also showed children television advertisements (following the procedures used by earlier researchers). In contrast to the focus on television related research, there has been almost no research into children's understanding

of advertisements in new media such as the Internet. Therefore in the following studies (Experiments 6 to 8), we investigated children's ability to recognize advertisements on Web pages.

CHAPTER 8

EXPERIMENT 6

8.1 Introduction

In this and the following chapters we will discuss children's ability to recognize advertisements on the Internet. Schumann and Thorson (2007) defined the Internet as "a network to network that operates on a set of technical protocols that enables people from around the world to access and exchange information using tools such as the World Wide Web, e-mail, chat rooms". The Internet was not available to the public until 1993, previous to that date it was used mainly by the U.S government as a form of communication (McMilan, 2007).

Although the Internet is a new medium, it has gained great popularity among children. Over 4 million US children access the Internet from school and 5.7 million from home (Austin & Reed, 1999) and nearly half of all 8- to 18-year-olds had Internet access in their homes (Roberts, Foehr, Rideout, & Brodie, 1999). In 2003 a report by Kaiser Family Foundation in the US showed that 3% of children under the age of 6 years had Internet access in their bedroom; 30% of 4- to 6-year-olds had accessed a children's website on their own, and 17% of children aged 6 years or younger had sent an email with parental assistance (Rideout, Vandewater, & Wartella, 2003).

In the UK, 75% of 9-19 year olds have Internet access at home: 19% of whom have direct access in their bedrooms (Livingstone & Bober, 2005) and in a recent media literacy report OFCOM noted that 16% of 5- to 7-year-olds, 41% of 8- to 11-year-olds and 64% of 12- to 15-year-olds use the Internet at home, and 13% of the 12 to 15-year-olds have Internet access in their bedroom in the UK (OFCOM, 2007).

Children in the UK between the ages of 7 and 16 are more likely to spend their time on the Internet than in front of the television (Fielder, Gardner, Nairn &

Pitt, 2007), and 63% of children aged 8-15 claim that many could not live without the Internet (OFCOM, 2006). Both parents and children believe that the Internet has helped them. Parents believe that the Internet can help their children with their homework (Fielder et al., 2007) and children say that the Internet not only provides information for their homework, but also provides entertainment and some believe that the Internet helps in developing their self identify and building their self esteem (Neeley, 2007). Livingstone and Bober (2005) found that 90% of children aged 9- to 19-year-olds used the Internet to do their homework or other assignments, 71% to send and receive emails, 55% to chat, 70% to play games, 46% to download music, and 26% to read newspaper articles. However, on a more negative side the Internet offers an opportunity for the children to explore Web pages, without parental supervision, which leads to serious concerns such as pornography and grooming by paedophiles (Livingstone & Bober, 2004) and cyber bullying (DCFS, 2006; MSN/YouGov survey, 2006).

Advertising on the Internet is also a concern (Fielder et al., 2007) because all the issues that apply to advertising on television (as described in Chapter 1) also apply to advertising on the Internet. In fact, advertising on the Internet is increasing more rapidly than television advertising (Neeley, 2007). Kunkel et al. (2004) reported that only about 2% of websites aimed at children were advertisement-free. In 2007 the UK banned unhealthy television advertisements to children for foods that were high in fat, sugar, and salt (HFSS). The ban on television advertising means that marketers are likely to spend less money on TV advertising and therefore it is likely that this money will be spent on other forms of advertising to children including Internet advertising. Recently, there has been an increase in the number of advertisements aimed at children on the Internet. Pidd (2007) suggested that food manufacturers, such as McDonald's, Starburst, Haribo and Skittles are now using the Internet to target children not only on their own company Web sites, but also through social networking Web pages and Internet chat programmes.

There are many ways of putting an advertisement on the Internet such as banners, pop-ups and spam emails (Nairn & Dew, 2007). Another type of

advertisements is "advergames" – when advertisement and games are blended together so that companies design Web pages that include online games to attract children to their Web pages (Moore, 2006). Nairn and Dew (2007) investigated the Web pages that children (aged 7 to 11 years) visited while on the Internet. Of the 50 Web pages that children listed as their favourites only a third were specifically aimed at children but these usually related to characters from children's television, comics, and toys. Nairn and Dew (2007) also analyzed the type of advertisements found on the 50 pages and found that three-quarters of the advertisements were banners with 17 advertisements for clothing, jewellery and cosmetics, 12 for financial services, 10 for computer games, and 9 for toys.

Almost all the research done on children's ability to understand advertisements has focused on television advertising (see Chapter 1). The first stage of understanding television advertising is when children can distinguish between advertisements and programmes (Kunkel et al., 2004). Researchers have found that young children can distinguish between advertisements and programmes at an early age (Levin et al., 1982; Butter et al., 1981; Bijmolt et al., 1998). For example, Levin et al. (1982) showed children a tape of advertisements and programmes and asked the children to shout out when an advertisement came on. They found that children as young as 3 years could identify advertisements at better than chance levels. Levin et al. (1982) suggested that the children relied on cues such as jingles, voiceover and pace of advertisements when distinguishing between advertisements and programmes. In a review of young children's ability, Gunter et al. (2005) concluded that overall the research has shown that nearly all children can successfully distinguish advertisements from programmes by the time they are 5 years of age.

However, there has been no research into how children identify advertisements on the Internet. Most of the research done on Internet advertising has looked at the food content of advertisements, ethical issues, and the role of regulation (Schumann & Thorson, 2007; Nairn & Dew, 2007). The one exception to this was a small study by Henke (1999) who investigated whether 9- to 11-year-olds demonstrated an awareness of persuasive intent in Web page

advertising. The children filled in two questionnaires, pretest and posttest, and in between the children had a hands-on Internet session. During this session children were told about the Internet in general and were shown five Web pages: for Toys R us; Ben & Jerry; Fosters; CNN, and the Museum of Science Web. Henke found that only about one-tenth of children thought the purpose of the sites was to advertise, and the rest thought that the purpose of the sites was to entertain. This showed that even at the age of 9-11 years children had difficulty understanding that the intent of advertisements was to sell. This is later than when most children realize that the purpose of television advertising is to sell products (see chapter 1).

Internet advertising and television advertising share some similar perceptual qualities such as sight and sound (Neeley, 2007). Both are aimed at children using visual and sound techniques to attract their attention (Calvert, 1999). However, the times of exposure are different. On television an advertisement may last about 30 to 60 seconds (Neeley, 2007) but it is the only thing broadcast at that time. Also, between a programme and the advertisements there is usually in the UK, a "bumper" to separate the two. But on the Internet advertisements and non-advertisements co-exist on the same Web page and may therefore be harder to distinguish.

8.2 Main hypotheses

As there has been no previous research into when children can distinguish advertisements on a Web page, in Experiment 6 we showed children Web pages that included one or more advertisements and asked the children to point to whatever they thought was an advertisement on the page. As far as we know this was the first study of its kind, and was to some extent an exploratory one. We used versions of actual Web pages taken from the Internet to make the task as realistic as possible. If children's ability to identify advertisements is similar in all media and we know that children can distinguish television advertisements from programmes from the pre-school years then we expected that all the children in Experiment 6 would be able to identify the advertisements. The youngest age group in Experiment 6 was 6-year-olds, and children of this age can usually

identify television advertisements with success rates of 90% or more (Bijmolt et al., 1998; Butter et al., 1981; Levin et al., 1982). However, if as we have suggested above, Web page advertisements may be harder to identify than television advertisements then it might be the case that some of the age groups in Experiment 6 would have difficulty recognizing the advertisements.

We included advertisements that were aimed at children and advertisements that were aimed at adults. We assumed that the products in the advertisements aimed at children would be more familiar to the children and that therefore they might be more likely to recognize children's advertisements than adult advertisements.

We also included small and large advertisements. We assumed that large advertisements might be easier to notice and that therefore large advertisements might be recognized better by children.

8.3 Participants

There were 90 children aged between 6 and 10 years. They were divided into three age groups, with the mean age of 6 years 7 months (range 6.00 - 6.11), 8 years 7 months (range 8.00 - 8.11) and 10 years 5 months (range 10.00 - 10.11). The children were recruited from schools in the Sheffield area. Their first language was English. Informed consent from parents was obtained.

Twenty adults were recruited for a pilot study. The adults were all undergraduates in Level 1 or 2 of a Psychology degree and their mean age was 18 years 11 months.

8.4 Materials

Twenty Web pages were chosen from Web pages on the Internet aimed at children (e.g. Nickelodeon, Sesame Street, Smile). The Web pages were retrieved in April 2005 (See table 8.1). To include a variety of different web sites, half the

pages were from UK Web sites ('national' ones) and half were from non-UK sites ('international' ones). All the pages were equally available at the time of selection.

The Web pages were edited using Adobe Photoshop 7, so that there were two versions of each page – one with advertisements and the same page without advertisements. When an advertisement was removed, the space was filled with a non-advertisement. Two versions of each page were used so that any findings would not be limited to a particular set of pages.

On the Web pages with advertisements there were 1, 2, 3, 4 or 5 advertisements on each page (see table 8.1). In total, there were 39 advertisements for children (e.g. Lego, story books, movies) and 19 advertisements for adults (e.g. cars, tissues, Pampers and mobile phones). The Web pages were printed in colour and laminated. The size of each printed Web page was 25.4 cm x 19.1 cm.

The Web pages were divided into two sets (Set A and B) for the experiment Half the children in each age group saw set A: 10 Web pages (2, 4, 7, 8, 10, 13, 14, 15, 16, and 20 from the list below) with no advertisements on them and 10 Web pages (1, 3, 5, 6, 9, 11, 12, 17, 18, and 19 from the list below) with advertisements, and half the children saw set B: 10 Web pages with advertisements (2, 4, 7, 8, 10, 13, 14, 15, 16, and 20) and 10 without (1, 3, 5, 6, 9, 11, 12, 17, 18, and 19).

The advertisements on the Web pages were divided into two sizes, small and large. Twenty-nine advertisements with an area (each less than 24 cm^2 on the page) were considered to be small advertisements. Twenty-nine advertisements (each more than 28 cm^2) were considered to be large ones.

Children were tested individually, in a quiet room in their school. The 20 Web pages were shuffled before being presented to a child, so that each child saw the pages in a different random order.

The Web pages that were used in the study were as follows:

Practice task:

a. Yahooligans was a Web page that was designed for children by Yahoo. Children can go to the page to find information, write emails and play games. One version of the Yahooligans Web page had 2 advertisements, for Wendy's and for Disney Cruise (see figure 8.1a). The other version had non-advertisements in place of the advertisements (figure 8.1b).

b. Kaboose was a family orientated Web page. Parents and children could find activities that they could do together. The parents can find recipes and health information for the children, while children can play games like counting games on the page. One version of the Web page had no advertisements, and the other version had 4 advertisements: for Sky, Orange, World Disney, and a Kaboose competition.

After the practice task children were tested with 20 Web pages. Details of these pages are shown in table 8.1.

Figures 8.2 to 8.6 show examples of the web pages (with 1, 2, 3, 4 or 5 advertisements) used in Experiment 6. In each case the Web page with advertisements in shown together with the corresponding page with advertisements removed.

	Name	Web pages	National or International	No. of ads	Advertisements CHILD OR ADULT	Area of the advertisement
1	CBeebies	www.bbc.co.uk/cbeebies	national	1	Harry Potter Stamps (Child)	4.2cm x 11cm (Large)
2	Smile	www.bbc.co.uk/cbbc/smile/index/shtml	national	1	Charlie & the Chocolate Factory movie (Child)	3.5cm x 10.4cm (Large)
3	Blue Peter	www.bbc.co.uk/cbbc/bluepeter	national	2	Ford (Adult) Scooby-Doo (Child)	4.2cm x 13.8cm (Large) 5.2cm x 9.5cm (Large)
4	Toonattik	www.toonattik.tv	national	2	Valiant the movie (Child) Valiant the movie (Child)	3cm x 6.3cm (Small) 1.5cm x 11.6cm (Small)
5	Arthur	www.pbskids.org/arthur/index.html	international	2	Honda (Adult) Pampers (Adult)	2.3cm x 15.9cm (Large) 4.1cm x 14.6cm (Large)
6	Fox Kids	www.foxkids.com	international	2	Yu-Gi-Oh DVD (Child) Kellogg's fruit twistable (Child)	2.3cm x 18.1cm (Large) 4.9cm x 10cm (Large)
7	Neopets	www.neopets.com/petcentral.phtml	international	2	Neopets key ring (Child) Wizard of Oz DVD (Child)	2.2cm x 18.1cm (Large) 3.4cm x 12.3cm (Large)
8	Sesame Street	www.sesamestreetworkshop.org/sesame street	international	2	Kodak (Adult) Cottonelle (Adult)	1.5cm x 11.6cm (Small) 3.5cm x 9.4cm (Large)
9	CBBC	www.bbc.co.uk/cbbc	national	3	Capital one (Adult) Sky game (Child) Incredibles (Child)	5.2cm x 10.4cm (Large) 2.2cm x 8.6cm (Small) 2.4cm x 4.2cm (Small)
10	Nick	www.nick.co.uk/primary/nick.aspx	national	3	Mc Donald's Happy Meal (Child) Madagascar movie (Child) Sponge Bob Movie (Child)	1.5cm x 11.9cm (Small) 3cm x 9.9cm (Large) 3.5cm x 1.8cm (Small)

	Name	Web pages	National or International	No. of ads	Advertisements CHILD OR ADULT	Area of the advertisement
11	Discovery Kids	www.kids.discovery.com	international	3	Discovery store (Child) Racing car (Child) DVD collection (Child)	1.5cm x 9.6cm (Small) 5.6cm x 9.2cm (Large) 3.9cm x 5.9cm (Small)
12	Disney	www.disney.go.com/home/today/index.html	international	3	Incredible (Child) Visa (Adult) Visa (Adult)	2.2cm x 18.1cm (Large) 2.3cm x 4.8cm (Small) 1cm x 3cm (Small)
13	Warner Bros	www.warnerbros.com/web/main/kids	international	3	Sky (Adult) O2 (Adult) Vonage (Adult)	2.3cm x 23.7cm (Large) 3cm x 12.1cm (Large) 2.2cm x 3cm (Small)
14	Yugioh	www.yugioh.com	international	3	Kellogg's Cinnamon (Child) Yu-Gi-Oh DVD (Child) Kleenex (Adult)	2.2cm x 18cm (Large) 4.5cm x 6.8cm (Large) 3cm x 12cm (Large)
15	Nick Jr.	www.nickjr.co.uk/primary/nickjr.aspx	national	4	Sky (Adult) Dora the explorer (Child) Luvs (Adult) Arcade Game (Child)	1.5cm x 11.6cm (Small) 1.5cm x 3cm (Small) 3.3cm x 13.4cm (Large) 3.6cm x 7.9cm (Large)
16	Toonami	www.toonami.co.uk	national	4	Xiaolin's radio (Child) Reese's Puff (Child) Shrek Play Station 2 (Child) Ipod nano (Child)	1.5cm x 11.5cm (Small) 3.7cm x 15.2cm (Large) 4.8cm x 13.6cm (Large) 3.1cm x 3.1cm (Small)
17	Animal Planet	www.animaldiscovery.com	international	4	Universal Studio (Child) Discovery store (Adult)	2.2cm x 18cm (Large) 1.5cm x 9.6cm (Small)

	Name	Web pages	National or International	No. of ads	Advertisements CHILD OR ADULT	Area of the advertisement
					Discovery store (Child) Zathura the movie (Child)	3.7cm x 5.9cm (Small) 3.9cm x 15.6cm (Large)
18	Cartoon Network	www.cartoonnetwork.com	international	4	Campbell's (Child) Bounty (Adult) Subway's for kids (Child) Racing Stripes DVD (Child)	2.3cm x 18.2cm (Large) 3.1cm x 6.1cm (Small) 1.9cm x 3.1cm (Small) 2.3cm x 9.5cm (Small)
19	CITV	www.citv.co.uk	national	5	DryNites (Adult) Sponge Bob DVD (Child) Madagascar the movie (Child) Tesco (Adult) Cheestrings (Child)	1.4cm x 10.4cm (Small) 3.9cm x 12.3cm (Large) 1.5cm x 6.1cm (Small) 3cm x 6.1cm (Small) 3.1cm x 6.1cm (Small)
20	Jetix	www.jetix.co.uk	national	5	Xbox (Child) World Disney (Child) World Disney (Child) Lego (Child) Hilton (Adult)	3.8cm x 3.2cm (Small) 5.4cm x 9.5cm (Large) 3.2cm x 3.8cm (Small) 3.8cm x 4.8cm (Small) 1.5cm x 11.6cm (Small)

Table 8.1. Web pages used in Experiment 6, showing name of web page, location, and whether national or international, also the number, type and size of the advertisements.

Figure 8.1a. Example of Web page, with 2 advertisements (Disney and Wendy's) as used in the practice task.

Figure 8.1b. Example of Web page with the advertisements removed and replaced with non-advertisements, as used in the practice task.

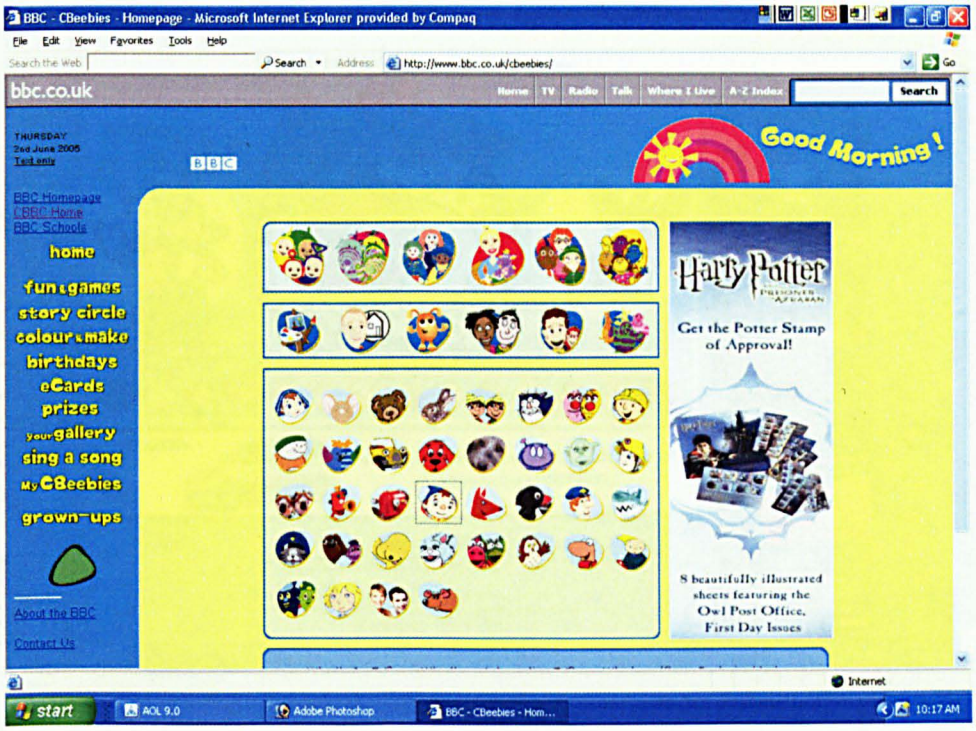

Figure 8.2a. Example of Web page, used in the experiment, with one advertisement (Harry Potter) for children.

Figure 8.2b. As Figure 8.2a, but with the advertisement removed.

Figure 8.3a. Web page with two advertisements (Honda and Pampers) for adults.

Figure 8.3b. As figure 8.3a but with the advertisements removed.

Figure 8.4a. Web page with three advertisements for children (Racing car, DVD set, and 'Gifts for Dads').

Figure 8.4b. As figure 8.4a but with advertisements removed.

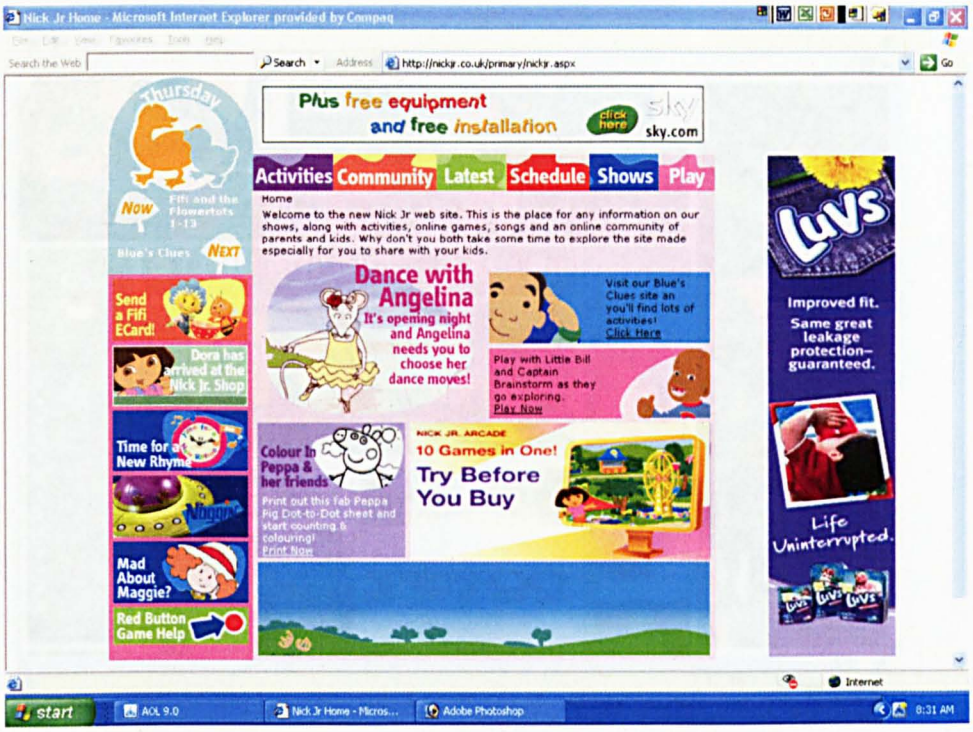

Figure 8.5a. Web page with four advertisements for children and adults (Luvs diapers, Sky subscription, 10 games in one and Dora).

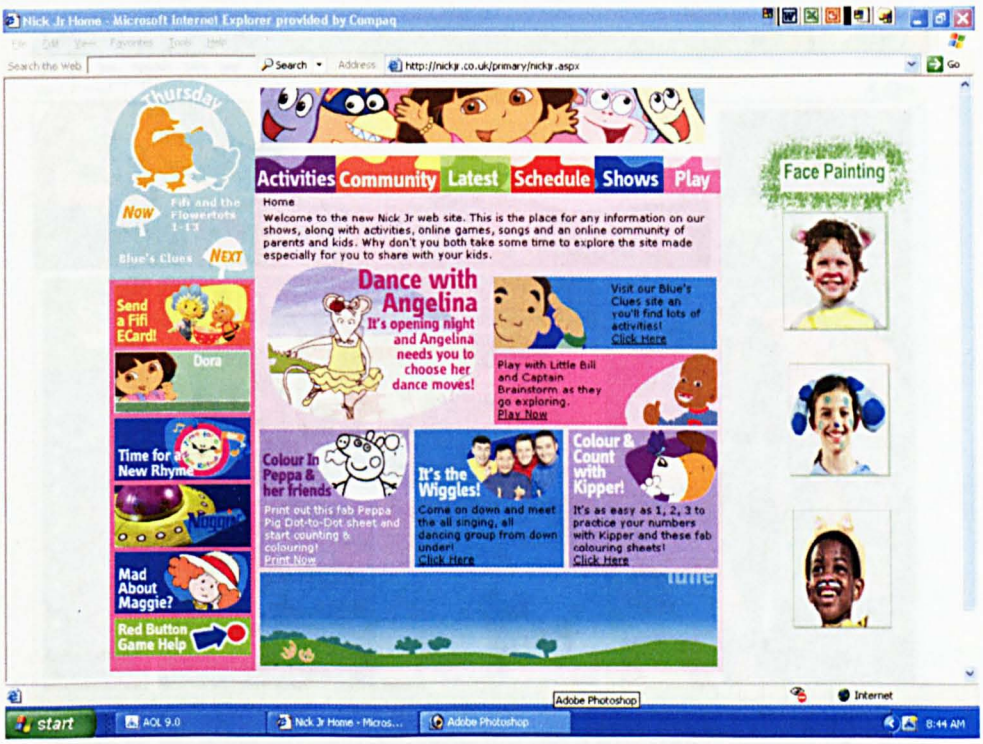

Figure 8.5b. As figure 8.5a with advertisements removed.

Figure 8.6a. Web page with five advertisements children and adults (Tesco, Cheesestrings, Sponge Bob Square DVD, Madagascar, Drynites).

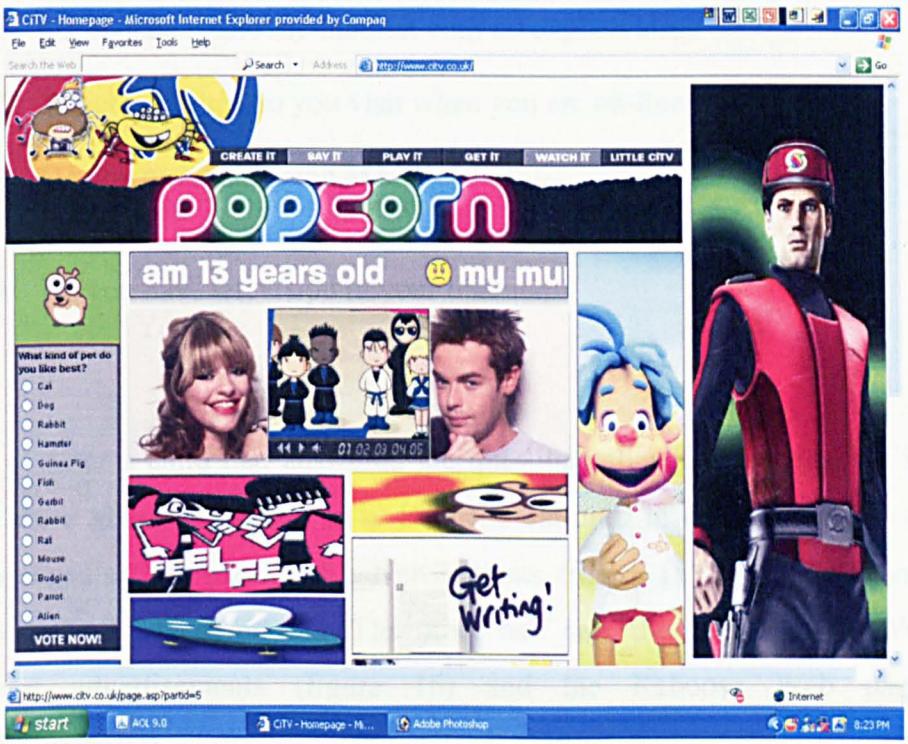

Figure 8.6b. As figure 8.6a with advertisements removed.

8.5 Procedure

Children were first asked 9 questions about their knowledge and use of the Internet:

1. Do you have a computer at home?
   Yes No

2. Do you have a computer in your room?
   Yes No

3. Do you use Internet at home?
   Yes No

4. Do you use Internet at School?
   Yes No

5. How often do you use the Internet?
   _____ /week

6. What do you do when you are using the Computer and Internet?
   Play a game Do homework Researching Browsing Email Other

   (the children were labelled 'researching' if they said that they had used the Internet to look for specific information, but as 'browsing' if they said they just looked round the Internet with no explicit aim).

7. Which websites do you visit when you are on-line?

8. Do you have television at home?
   Yes No

9. Do you have television in your bedroom?
   Yes No

After a child had answered the questions about their use of the Internet, they were given a practice task. Half the children in each age group saw the Yahooligan's Web page with advertisements (figure 1a) and the Kaboose Web page without advertisements. The other half saw the Yahooligan's Web page without advertisements (figure 1b) and the Kaboose Web page with advertisements.

For the practice task the experimenter told the child, "Look at this page carefully. Some pages include advertisements and some don't. Can you see an advert?". The child was asked to answer yes or no. If a child said yes, the Web page was put in a 'Yes' pile, and if he or she said no, the Web page was put in a 'No' pile. When the child finished separating the Web pages, the experimenter took the 'Yes' pile of Web pages and showed them, one by one, to the child again. The child was asked to point to anything on the page that she or he thought were advertisements.

After the children had done the practice trials, they were given the experimental task. The procedure was the same as in the practice task. The 20 Web pages were presented randomly, one by one. During the presentation, the experimenter told the participant, "Look at this page carefully. Remember some pages include advertisements and some don't. Can you see an advert?". Depending on the child's answer the pages were put in a Yes or No pile. After looking at all 20 Web pages, the experimenter went through the Web pages from the 'Yes' pile, and the child was asked to point to any advertisements. Children's correct pointing was noted.

At the end of this task, the experimenter said, "If you were an advertiser/marketer, where would you put the adverts on a Web page?" The child was asked to draw one or more rectangles to represent advertisement(s) on a blank sheet of A4 paper (presented in landscape format). The child could draw as many rectangles wherever they wanted.

The experiment lasted 10 to 15 minutes. At the end of the experiment the child was thanked for taking part and offered a sticker.

8.6 Pilot study with adults

A pilot study was carried out with 20 adults. Ten adults saw Set A and 10 saw Set B with 29 advertisements in each set (see page 130). There was no difference between Set A and Set B ($t = 1.67$, $df = 9$, $p > .05$) and so the results

were combined. The mean percentage of advertisements recognized correctly was 84%. Two adults identified all 29 advertisements, 1 identified 28 advertisements and 1 identified 27 advertisements and the other 16 adults identified between 26 and 19 of the advertisements correctly. In other words, the task made sense to the adult participants, and they were able to identify nearly all the advertisements correctly.

8.7 Results

The percentages of children having computers and televisions at home and in their bedroom (questions 1, 2, 8 and 9) are shown in table 8.2, and the children's use of computers (questions 3 and 4) is shown in table 8.3. Table 8.4 summarizes children's responses to question 6, about their activities on the Internet.

AGE	COMPUTER		TELEVISION	
	HOME	BEDROOM	HOME	BEDROOM
6-year-olds	90 %	17 %	97 %	40 %
8-year-olds	90 %	27 %	100 %	53 %
10-year-olds	90 %	17 %	100 %	30 %

Table 8.2. Percentage of children having access to computers and television in Experiment 6.

AGE	INTERNET USE	
	HOME	SCHOOL
6-year-olds	73 %	50 %
8-year-olds	60 %	100 %
10-year-olds	77 %	93 %

Table 8.3. Percentage of children using the Internet at home and school in Experiment 6.

AGE	CHILDREN'S ACTIVITIES ON INTERNET					
	Play games	Homework	Research	Browse	Email	Other
6-year-olds	70 %	23 %	13 %	33 %	33 %	10 %
8-year-olds	57 %	23 %	33 %	10 %	23 %	10%
10-year-olds	70 %	33 %	47 %	10 %	33 %	10 %

Table 8.4. Children's activities on the Internet.

Tables 8.2 to 8.4 show that each age group had approximately the same access to computers, that the majority of children had used the Internet at home or at school, and that the children had carried out a variety of activities while using the Internet. Therefore we expected that nearly all the children were familiar with the Internet and that they would have seen Web pages before taking part in the experiment.

As a preliminary analysis we looked at children's total number of points regardless of whether the children pointed to an advertisement or not (see table 8.5).

	Total number of points	Mean
6-year-olds	1371	45.70
8-year-olds	1070	35.67
10-year-olds	1081	36.03

Table 8.5. Total and mean number of points in each age group.

A one-way ANOVA was conducted to investigate whether any age group pointed more than another. There were no significant differences between the groups $F(2,87) = 1.842$, $p > .05$, partial $\eta^2 = 0.04$. In other words, any differences in correct performance between the age groups were unlikely to be due to one group pointing more frequently than another group.

The following analyses focus on children's correct performance, i.e. the number of times they pointed appropriately to an advertisement on a Web page.

There was no difference between children's correct performance on Set A and Set B, and therefore this factor was not considered further. The main analysis looked at advertisements based on their type and size. There were two types of advertisement on the Web pages. There were advertisements for children (e.g. Kellogg's, Sponge Bob Square Pants video, etc) and advertisements for adults (e.g. Pampers, Honda, etc). The children and adult advertisements were divided into two sizes, small ones and large ones (see page 132-134). Table 8.6 shows the percentage of advertisements correctly identified by each age group.

	CHILD ADVERTISEMENTS		ADULT ADVERTISEMENTS	
	SMALL (N =20)	LARGE (N = 19)	SMALL (N = 9)	LARGE (N = 10)
6-year-olds	11 %	17 %	12 %	22 %
8-year-olds	12 %	25 %	15 %	32 %
10-year-olds	22 %	35 %	27 %	44 %

Table 8.6. Percentage of advertisements correctly identified by each age group, by type and size of advertisement.

A 3 age group (6-, 8- or 10-year-olds) x 2 type (adult or children advertisements) x 2 size (small or large) ANOVA was carried out. The effect of age was significant: $F(2,87) = 20.08$, $p < .001$, partial $\eta^2 = .32$. A Bonferroni post-hoc test ($p < .001$) showed that the 10-year-olds (mean percentage, 32%) recognized more advertisements than the 8-year-olds (mean, 21%) and the 6-year-olds (mean, 16%). There was no difference between the 6- and 8-year-olds ($p > .05$).

The effect of type was significant: $F(1,87) = 29.11$, $p < .001$, partial $\eta^2 = .25$ because children identified advertisements for adults (mean percentage, 26%) better than they identified advertisements for children (mean, 21%). The type by age interaction was not significant: $F(2,87) = 1.36$, $p > .05$, partial $\eta^2 = .030$.

The effect of size was significant: $F(1,87) = 107.09$, $p < .001$, partial $\eta^2 = .552$, because large advertisements (mean percentage, 29%) were recognized better than small advertisements (mean, 17%).

The size by age interaction was also significant: $F(2,87) = 3.27$, $p < .05$, partial $\eta^2 = .070$. Each age group was better at recognizing the large advertisements than the small ones but the difference in performance between success on the large and small advertisements was much more marked for the 10-year-olds (38% and 24% respectively) and the 8-year-olds (28% and 13%) than for the 6-year-olds (19% and 11%).

The type by size interaction was also significant: $F(1,87) = 5.11$, $p < .05$, partial $\eta^2 = 0.55$. There was little difference between children's performance on the small adult advertisements (18%) and small children advertisements (15%), but a bigger difference between performance on large adult advertisements (33%) and large children advertisements (26%). The three-way interaction between type, size and age was not significant: $F(2,87) = .015$, $p > .05$, partial $\eta^2 = .00$.

An ANCOVA analysis was carried out between the number of times per week they logged on to the Internet at home and the number of correct points made by the children. There was no significant relationship between number of times and pointing accuracy, $F(1,84) = .24$, $p > .05$, partial $\eta^2 = .003$.

When children pointed, incorrectly, to a non-advertisement we called this a false positive. The mean number of false positives by each age group was 6-year-olds: 23.90 (52% of all points by this age group); 8-year-olds: 15.33 (43%), and 10-year-olds: 11.17 (31%). There was a significant difference between the age groups, $F(2,87) = 8.36$, $p < .001$, and Bonferroni post-hoc tests ($p < .05$) showed that the 6-year-olds made more false positives than the 8-year-olds and the 10-year-olds. There was no difference between the 8- and 10-year-olds ($p > .05$).

In the drawing task children were asked to draw, on an A4 sheet of paper, what they thought was an appropriate position for an advertisement. Children's

drawings were coded for the number of advertisements they drew, the total area of the advertisement(s) they drew (in square cms), and the mean size of the advertisements they drew. These data are shown in table 8.7.

Age	Mean number of adverts drawn	Range	Mean of total area (cm^2)	Range (cm^2)	Mean size of adverts (cm^2)	Range (cm^2)
6 yrs	1.57	1 - 9	82.49	2 - 322	62.39	2 - 322
8 yrs	1.17	1 - 3	69.77	1 - 333	63.81	1 - 333
10yrs	1.37	1 - 4	99.01	9 - 284	80.28	9 - 284

Table 8.7. Mean and range for the number of advertisements, total area, and size of advertisements drawn by each age group.

A one-way ANOVA showed no differences between age groups for the number of advertisements drawn, $F(2,87) = .99$, $p > .05$, partial $\eta^2 = .02$. There were no differences between age groups for the total area of the drawn advertisements, $F(2,87) = 1.06$, $p > .05$, partial $\eta^2 = .02$. Six-year-olds used 13% of the area of the A4 paper, 8-year-olds used 11%, and 10-year-olds used 16% of the paper Also, there were no differences between age groups for the size of advertisements drawn, $F(2,87) = 0.591$, $p > .05$, partial $\eta^2 = .01$. The lack of difference was due to the very wide ranges in the drawings. Children in all three age groups drew several advertisements on the page. For each age group the total size and the mean size of these varied from children who drew one very small advertisement to children who covered a large proportion of the paper.

We divided the sheet of A4 (landscape format) into 9 equal rectangles (3 x 3) to investigate whether children had any preferences for where they placed their advertisements (see table 8.8). Because children drew different numbers of advertisements on the page we could not carry out any formal analyses on the position of the drawings, but the data in table 8.8 suggests two trends. First, there were few differences between the three age groups. Second, there was an overall preference for children to place their advertisement in the top or middle rows of

the page, and for all three age groups the least commonly chosen positions were ones along the bottom of the page.

	Top left	Top middle	Top right	Middle left	Middle middle	Middle right	Bottom left	Bottom middle	Bottom Right
6 yrs	13	16	10	11	19	13	6	11	10
8 yrs	13	14	16	7	10	19	3	3	3
10yrs	14	18	16	16	18	16	10	10	15
Total	40	48	42	34	47	48	19	24	28

Table 8.8. Total number of advertisement drawn in each of 9 places on the A4 sheet.

8.8 Discussion

All previous research into children's recognition of advertisements has been about the recognition of advertisements on television. There have not been any previous studies of how children recognize advertisements in media like the Internet. In Experiment 6 we asked children to identify advertisements on actual Web pages. Adults were able to recognize the majority of the advertisements, but the children had difficulty identifying them. This was the main finding, because the 6- and 8-year-olds recognized less than a quarter of the advertisements, and the 10-year-olds recognized only a third of them. All the children made a large number of false positive identifications, and the 6-year-olds made more false positive identifications than correct ones. Therefore all the children found the task a hard one.

The children's poor performance is in contrast to the findings from earlier researchers who looked at the ability to identify television advertisements (Bijmolt et al., 1998; Butter et al., 1981; Levin et al., 1982) because these researchers found that most young children could distinguish a television advertisement from a programme by 5 years of age. As pointed out above, much older children had difficulty distinguishing an advertisement on a Web page. The

youngest children in Experiment 6 were 6-year-olds, an age when nearly all children can recognize a television advertisement, but these children were very poor at the task and actually pointed more often to non-advertisements than advertisements. Even the oldest children in Experiment 6, the 10-year-olds only identified a minority of the Web page advertisements. Therefore, we concluded that even when children can recognize advertisements in one medium (television) they may not be able to do so in another medium (the Internet).

We considered some of the reasons why children were poor at recognizing advertisements on a Web page. First, advertisements we used might have been very hard to recognize, but this did not seem to be the case because the adult sample were able to identify them. Second, it can be assumed that all children have less experience of the World Wide Web than they do of television, and it might even have been the case that the children were unfamiliar with Web pages. Nonetheless our survey showed that the majority of children had used the Internet at home and/or school, and therefore we assumed that most of the children were familiar with the idea of a Web page (and that most had therefore seen advertisements on Web pages). Third, on television, the separation between advertisements and programmes is clear, and they are presented at the same time but on the Internet, all advertisements and non-advertisements are presented on the same page and so there is no boundary between advertisements and the surrounding content of the page. This may make it more difficult to distinguish advertisements on a Web page.

Children were better at identifying large advertisements than small ones. There could be two reasons for this. Children may believe that a large image means that the image is an advertisement, and therefore they pointed to the biggest images on a page. Alternatively, if children had just been pointing randomly they may have been more likely to point to a larger area on the page than a smaller area. In Experiment 6 we used real Web pages and did not control for the size of the advertisements or non-advertisements on the page. The results of Experiment 6 showed that when children are asked to point to a Web page they may prefer to point to larger than smaller areas, but it is difficult to know why this

happens. In Experiments 7 and 8 we repeated Experiment 6, but we invented our own Web pages so that all the images on the pages were approximately the same size so that children could not be biased in choosing advertisements and non-advertisements by their size on the page.

Two-thirds of the advertisements used in Experiment 6 were taken from Web pages aimed at children and were therefore designed to be seen by children. Despite this, as we found, the children were poor at recognizing the advertisements. As well as the advertisements aimed at children Experiment 6 also included advertisements aimed at adults. Contrary to our expectation we found children were better in identifying the advertisements aimed at adults. This might be because children are exposed to all kinds of advertisements (Gunter et al., 2005) and therefore they may be capable of recognizing advertisements aimed at adults. Nonetheless, the fact that children were not only poor are recognizing advertisements in general and were particularly poor at recognizing ones aimed at them may be a matter of concern because it means that children may be seeing images without realizing that the images are advertisements that are trying to sell them products.

At the end of the experiment children were asked to draw advertisements on A4 paper (in landscape form) and this showed that children had a preference to put advertisements in the top third or in the middle third of the paper. Children tended to put less advertisements in the bottom third of the page. This might mean that young children expect advertisements to occur in the middle or upper half of a Web page. We did not analyse the children's pointing choices to see if there was a preference in pointing to particular places on the page because we used actual pages in Experiment 6 and the position, type, and size of the advertisements was not controlled, so any bias in pointing might have been due to any one of these factors, or a combination of them. In the next study, Experiment 7, we did take these factors into account by controlling the type and size of the advertisements and counterbalancing their position on the page.

The drawing task was difficult to interpret because although the children were asked to indicate on their drawings where they should put an advertisement, they may have interpreted this to mean where had they seen advertisements on the Web pages shown to them earlier in the experiment. As Experiment 6 included a range of advertisements (between 1 and 5 in various positions on the page) and advertisements of many different sizes this may have accounted for the variety of responses in the drawing task. We used the drawing task again in Experiment 7 (next chapter), but in that experiment all the advertisements the children saw were approximately the same size and there were never more than a maximum of 2 advertisements per page. If children's drawing reflected what they had seen in the experiment (rather than where they believed they saw Web advertisements in general) then we expected there might be differences in performance between Experiment 6 and 7. If children's performance in Experiment 7 changed and corresponded more to the advertisements they were shown in Experiment 7 then we could assume that children were not necessarily drawing where they typically expected to see advertisements, but only what they had seen earlier during the study. We will therefore delay further discussion of the drawing task until the next chapter.

In summary, the most important result from Experiment 6 is that children, up to the age of 10 years had difficulty recognizing advertisements on Web pages. This was in major contrast to children's ability, in previous research, to recognize television advertisements. If children cannot recognize Internet advertisements it has major implications for descriptions of children's understanding of advertisements and also implications for regulating advertising to children and these will be discussed in the following chapters.

CHAPTER 9

EXPERIMENT 7

9.1 Introduction

In Experiment 6, the children were asked to recognize advertisements on Web pages and children performed poorly on the task, because only less than one third of older children could recognize advertisements on the Web pages. In Experiment 7 we carried out a second study with Internet advertisements. The main purpose was to find out if the findings about children's performance at different ages could be replicated. In Experiment 7 we tried to overcome some of the limitations of Experiment 6, so rather than using actual Web pages, we invented pages that were similar to actual pages. Experiment 6 showed that size was a factor in pointing to advertisements because children tended to point more often to large advertisements (rather than small advertisements). Therefore in Experiment 7 we made all the advertisements approximately the same size. Also, because we used real Web pages in Experiment 6 there was no control over the position of the advertisements on the page, but in Experiment 7 we placed the advertisements equally often in each part of the page. Unlike Experiment 6, which included advertisements aimed at children and adults, we focused on advertisements designed mainly for children in Experiment 7, We focused on advertisements for children as these were the type of advertisements that children would see on Web sites aimed at them.

A second purpose of Experiment 7 was to consider one of the cues that children might use to distinguish an advertisement on a Web page. As discussed in Chapter 8, children probably distinguish television advertisements on the basis of various internal and contextual cues. Such cues are less common on Web pages, and therefore young children may have greater difficulty distinguishing an advertisement on a Web page than in other media. However, one cue that can be used to identify an advertisement is price information and we included this as a variable in Experiment 7.

In Experiment 7 approximately half the advertisements included a price and half did not, and we expected that, overall, advertisements with prices might be easier to identify than ones without prices. Although most children in the UK receive pocket money from about 6 years of age (Furnham, 1999; 2001) and have some experience of making purchases from this age, young children's concept of money and the relationship between prices and products is limited (Bonn & Webley, 2000; Damay, 2008; Gunter & Furnham, 1998). It is not until about the age of 7 or 8 years that children begin to appreciate that a particular product has a specific price, but even at this age some children cannot offer a reason for the price of a product (Berti & Bombi, 1981; Leiser, Sevón & Lévy, 1990). Therefore, if price provided a cue for identifying an advertisement we expected it would be a more effective cue for older children, who have a better appreciation of the concept of price.

9.2 Main hypothesis

The prices that we included on the Web pages were ones such as: £9.99 or £16.99. These prices were typical of the ones we found on Web pages aimed at children at the time of this experiment. We expected the children aged 8 years and above to be able to read such numbers and be familiar with the currency signs (£). However, not all 6-year-olds are competent at reading 3 or 4 digit numbers (Nunes & Bryant, 1996) and although 6-year-olds in UK schools are often introduced to currency signs through play activities that involve shopping and toy money, they are not formally taught about currency signs until 7 years of age (Department for Education & Employment, 1999). The 6-year-olds' more limited ability to read prices was a further reason why we expected this age group to benefit less from the inclusion of a cue like price information.

9.3 Participants

One hundred and sixty one children aged 6, 8, and 10 years were included in the experiment. The children were recruited from three local schools in the Sheffield area. All the children spoke English as a first language.

9.4 Materials

The two Web pages used for the practice task in Experiment 6 were also used for a similar practice task in Experiment 7.

For the experimental task 27 Web pages were designed especially for this experiment. They were designed by using Adobe Photoshop 7 and Adobe Photoshop CS. Each of the Web pages was divided into nine roughly equal areas. Each of the Web sites was designed so it resembled a real Web page that children might see on the Internet. Some of the backgrounds were taken from different Web pages on the Internet, the images were selected from actual Web pages and from Art Clips, and the advertisements were based on actual advertisements aimed at children.

There were 9 Web pages with two advertisements on them, 9 pages with one advertisement and 9 pages without advertisements. The pages without advertisements were included so that children would not always expect there to be advertisements on every page because this might have led to them just guessing. Half of the advertisements included the price of the product (e.g. £9.99). Web pages with two advertisements included one advertisement with price and one without price. The advertisements with and without prices occurred approximately equally often in each of the 9 areas on the page. All the pages were printed in colour on A4 sheets of paper (21 cm x 29.5 cm).

Theme of Web page	Number of advertisements	Type of advertisement (price/no price)
Railways	0	--
Aeroplanes	0	--
Languages	0	--
Geometric shapes	0	--
Transportation	0	--
Flowers	0	--
Clocks	0	--
Religions	0	--
Insects	0	--
Music	1	DVD (Tracy Beaker - Price)
Be active	1	Toy (Tamagotchi - Price)
Eat 5 a day	1	Food (Oreo - No price)
Science	1	Book (Patrick's bag story - No price)
Magic	1	Toy (Harry Potter's wand - Price)
Universe	1	Toy (Star Wars spaceship - Price)
Cooking	1	Food (Max crisp - No price)
Variety	1	Food (ASDA's choc. Cereal - No price)
Around the world	1	Food (McCoy crisp - Price)
Foods	2	Food (Rice Krispies - No price) Food (Tesco's yogurt - Price)
Animals	2	Game (Postman Pat - Price) Toy (Pikachu - No price)
Outdoors	2	Toy (Yugioh - Price) Food (Marmite - No price)
Camping	2	Toy (Humpty Dumpty bear - No price) Rainbow Pool (Price)
Sea	2	DVD (Finding Nemo - Price) Food (Pringles) (No price)
Botany	2	Pet Plant's key ring charm (Price) Game (Balamory - No price)

Theme of Web page	Number of advertisements	Type of advertisement (price/no price)
Anatomy	2	Toy (Action Figure Dr. Who - Price) Game (Operation - No price)
Occupations	2	Shoes (Geox - No price) Food (Hula Hoop crisps - Price)
Arts and Crafts	2	DVD (Harry Potter - No price) Food (McVities Biscuit - Price)

Table 9.1. Web pages used in Experiment 7, showing the theme of the Web pages, the number and the type of the advertisements.

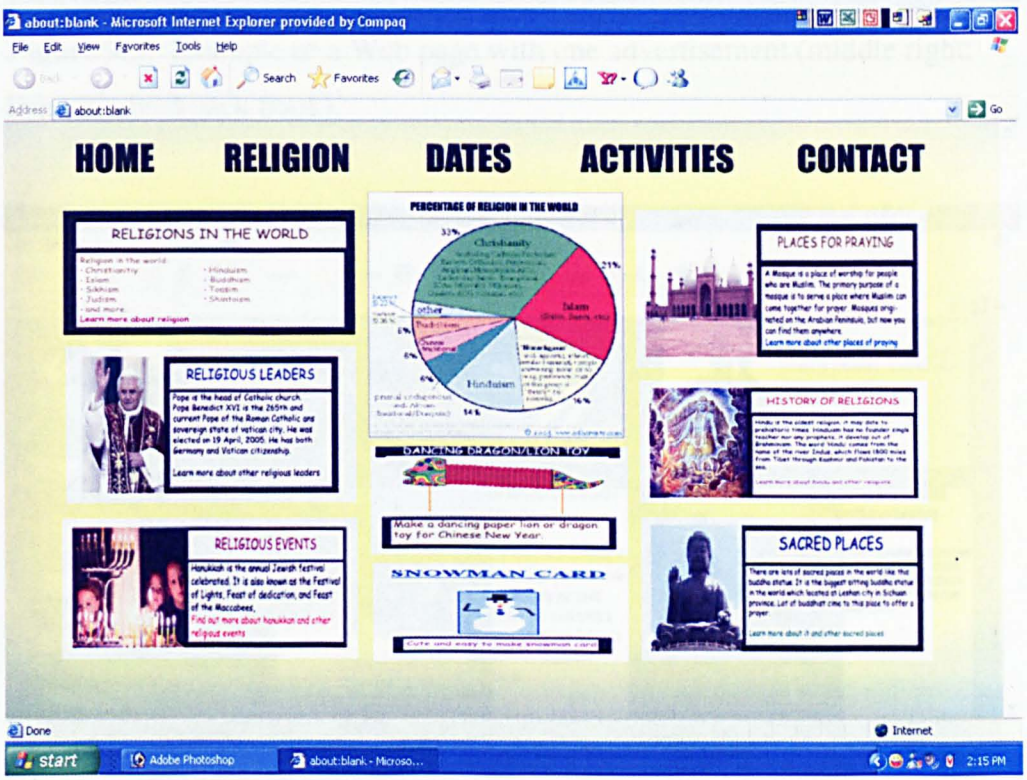

Figure 9.1. Example of a Web page without advertisements.

Figure 9.2. Example of a Web page with one advertisement (middle right: Patrick's backpack book).

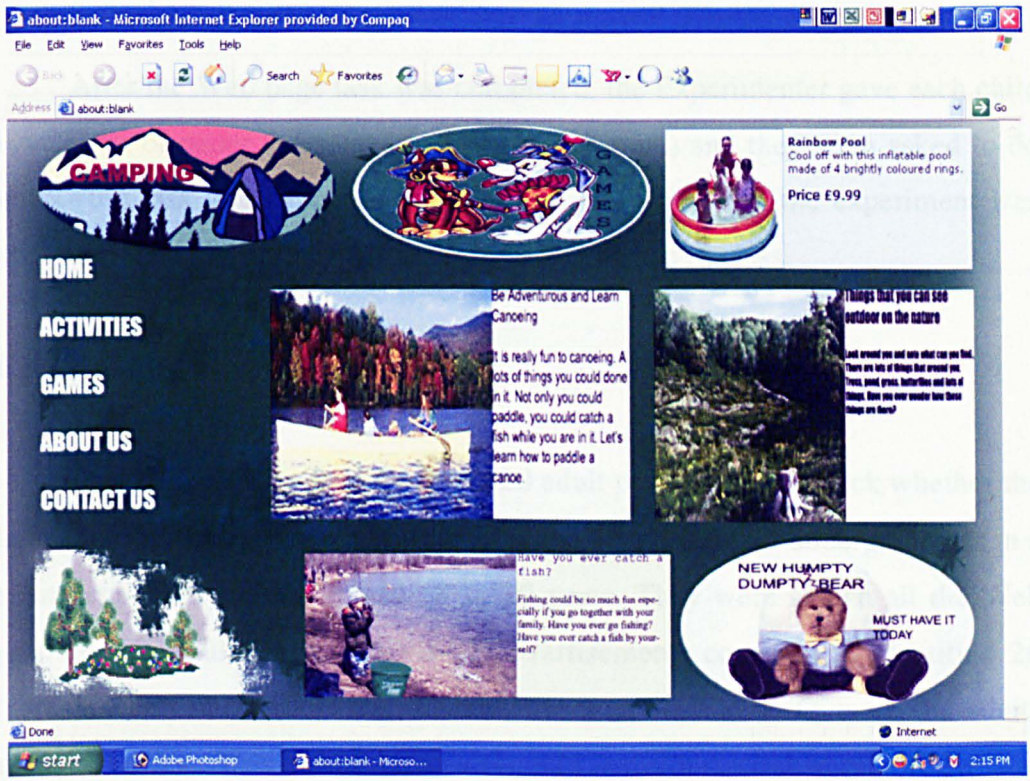

Figure 9.3. Example of a Web page with two advertisements (top right and bottom right: Rainbow pool and Humpty Dumpty Bear).

9.5 Procedure

Children were tested individually in a quiet room. The children were asked the same questions about television and Internet use as in Experiment 6 (see page 141).

Children were first given a practice task as in Experiment 6. Then the Experimenter showed the child the pile of 27 Web pages, and said, "There are 27 Web pages on this stack. Some pages have only one advertisement, some have more than one advertisement and some don't have any. Now I am going to show you the Web pages one by one and ask you if there are any advertisements on the page. Tell me if you think that you see any advertisements on the page. Please look at the page carefully." If the child said yes, they were asked: "Could you point to the advertisement?". Children could point as many times as they wanted. When a child said they could not see any advertisements on a page, or when they had finished pointing, the experimenter presented the next Web page. The pages were shown in a different random order for each child.

After the Web page task was completed, the Experimenter gave each child an A4 sheet of paper (presented in landscape format) and they were asked to do the drawing task as in Experiment 6 (see page 142). When the experiment was completed, each child was given a sticker and returned to class.

9.6 Pilot study with adults

The Web pages were tested with 20 adult participants to check whether the adults could recognize the advertisements. The adults were all undergraduates in a Department of Psychology, aged 18 to 20 years. They were shown all the Web pages. Eleven adults identified all 27 advertisements correctly, 8 identified 26 advertisements, and 1 identified 25 advertisements correctly. Overall, the adults were 98% correct. This meant that adults could perform the task successfully.

9.7 Results

The percentages of children with computers and televisions at home are shown in table 9.2. Children's use of computers is shown in table 9.3. Table 9.4 summarizes children's activities on the Internet (see page 141 for an explanation of the categories of use).

AGE	Computer		Television	
	Home	Bedroom	Home	Bedroom
6-year-olds	79 %	18 %	100 %	30 %
8-year-olds	87 %	17 %	98 %	49 %
10-year-olds	92 %	31 %	100 %	35 %

Table 9.2. Percentage of children having access to computers and televisions in Experiment 7.

AGE	Internet use	
	Home	School
6-year-olds	58 %	49 %
8-year-olds	64 %	89 %
10-year-olds	76 %	96 %

Table 9.3. Percentage of children using the Internet at home and at school in Experiment 7.

Age	Children's activities on the Internet					
	Play games	Homework	Research	Browse	Email	Other
6-year-olds	75 %	11 %	7 %	0 %	12 %	2 %
8-year-olds	79 %	28 %	62 %	4 %	13 %	26 %
10-year-olds	75 %	10 %	72 %	0 %	12 %	25 %

Table 9.4. Children's activities on the Internet.

Almost of all the children had a television and computer at home, and the majority had used the Internet. On average 6-year-olds said they used the Internet once or twice a week at home; 8-year-olds used it 2 to 3 times a week, and 10-year-olds used it 3 times a week. In school, the 6- and 8-year-olds said they used the Internet once a week and 10-year-olds used it twice a week.

Age	Total number of points	Mean
6-year-olds (n = 57)	1694	29.72
8-year-olds (n = 53)	1928	36.38
10-year-olds (n = 51)	1690	33.14

Table 9.5. Total and mean number of points for each age group in Experiment 7.

Table 9.5 shows the total number and the mean number of points per child for each age group of children regardless of whether it was correct or incorrect. (For comparison, the total number of points by the adults was 590 and the mean per adult was 29.5). A one-factor age groups (6-, 8-, and 10-year-olds) x number of points ANOVA was carried out. There was no significant difference between the groups of children, $F(2,158) = 2.48$, $p > .05$, partial $\eta^2 = .030$.

AGE	NO PRICE (n = 14)	PRICE (n = 13)	MEAN TOTAL (n = 27)
6-year-olds	30.8 %	26.6 %	28.7 %
8-year-olds	58.2 %	54.4 %	56.3 %
10-year-olds	69.5 %	76.9 %	73.2 %

Table 9.6. Percentage of correct advertisement identification for each age group and condition.

The percentage of advertisements identified correctly by each age group is shown in table 9.6. A 3 age group (6-, 8-, 10-year-olds) x 2 price (with price or without price) ANOVA was carried out. There was no main effect for price ($F(1,158) = .120$, $p > .05$, partial $\eta^2 = .001$), but a significant main effect was found for age ($F(2,158) = 76.99$, $p < .001$, partial $\eta^2 = .494$) and Bonferroni post-

hoc test showed that there were differences between all three age groups ($p < .001$). There was also an age x price interaction ($F(2,158) = 7.29$, $p < .01$, partial $\eta^2 = .084$). Ten-year-olds were more likely to point to advertisements with a price than ones without ($t = 2.754$, $df = 50$, $p < .01$). In contrast, 6-year-olds were more likely to identify advertisements without a price than advertisements with a price ($t = 2.14$, $df = 56$, $p < .05$). There was no difference in 8-year-olds' performance on advertisements with and without prices ($t = 1.51$, $df = 52$, $p > .05$) - see table 9.6 for means.

As in Chapter 8, an ANCOVA analysis was carried out between the number of times children logged on to the Internet (i.e. home and school) per week and the number of correct points they made. There was no significant effect of the between subject factor for number of times they went on the Internet at home ($F(1,152) = .17$, $p > .05$, partial $\eta^2 = .001$) or number of times they went on the Internet at school ($F(1,152) = .04$, $p > .05$, partial $\eta^2 = .00$).

If children pointed to a non-advertisement as an advertisement then children were said to make a false positive identification. Each of the Web pages was divided into 9 areas, and overall the 27 pages included 27 advertisements and 216 non-advertisements. The mean number of false positives (out of a maximum possible of 216) by each age group was: 6-year-olds, 22.07; 8-year-olds, 21.15; and 10 year-olds, 13.41. There was a difference between the age groups, $F(2,158) = 5.4$, $p < .01$, and Bonferroni post-hoc tests showed that the 6-year-olds ($p < .01$) and the 8-year-olds ($p < .05$) made more false positives than the 10-year-olds. There was no difference between the 6- and 8-year-olds ($p > .05$).

In the Web page task children could point as often as they liked. Therefore children might score the same number of successful hits but with different numbers of incorrect (false positive) ones. For example, on a Web page with two advertisements one child might point just twice and both times correctly to the advertisements, but another child might point correctly to the two advertisements and also incorrectly to four other places on the page. Both children would score the same number of successful hits, but the former child might be considered to be

the more accurate child. Therefore to take into account both correct 'hits' and incorrect 'false positives' a d-prime analysis was carried out. The mean of d-prime for each age group was .72 (age 6), 1.55 (age 8) and 2.81 (age 10). A one-factor ANOVA was carried out on the d-prime score. There was a significant difference between age groups ($F(2,158) = 42.94$, $p < .001$, partial $\eta^2 = .35$). Older children were better in identifying between advertisements and non-advertisements. Bonferroni post-hoc test ($p < .05$) showed that there was a significant difference between all three age groups. The results of the d-prime analysis were the same as the age results from the previous ANOVA (above) for number of hits, and so there was no reason to believe that the age groups had different patterns of performance underlying their successful performance.

We looked at the mean number of points that children made for each type of Web page (table 9.7). If children were responding in a way that reflected the number of advertisements on a page we expected there to be least points to pages without advertisements, more frequent points to pages with 1 advertisement, and most points to the pages with 2 advertisements,

Age	Pages with 0 advertisements	Pages with 1 advertisement	Pages with 2 advertisements
6-year-olds	0.87	1.13	1.30
8-year-olds	0.73	1.40	1.90
10-year-olds	0.42	1.28	1.98

Table 9.7. Mean number of points per Web page, depending on number of advertisements per page.

A 3 age groups (6-, 8-, and 10-year-olds) x 3 type of Web pages (1, 2 or 0 advertisement) ANOVA was carried out. The main effect for type of page was significant: $F(2,316) = 201.92$, $p < .001$, partial $\eta^2 = .561$. However, there was also an age by type of page interaction ($F(4,316) = 20.36$, $p < .001$, partial $\eta^2 = .205$). 10-year-olds pointed more to Web pages with two advertisements than with one advertisement ($t = 8.24$, $df = 50$, $p < .001$) or without advertisements ($t =$

21.05, df = 50, p < .001) and they were more likely to point to Web pages with one advertisement than pages without an advertisement (t = 9.24, df = 50, p < .001). See table 9.7 for mean scores. Like the 10-year-olds, the 8-year-olds also pointed more to Web pages with two advertisements than with one advertisement (t = 6.32, df = 52, p < .001) and also pointed more to a page with one advertisement than a page without an advertisement (t = 6.48, df = 52, p < .001). The 6-year-olds pointed to Web pages with two advertisements more than pages without any advertisements (t = 4.73, df = 56, p < .001), but in contrast to the 8- and 10-year-olds, there was no difference between 6-year-olds pointing to advertisements on Web pages with one or two advertisements. This might mean that compared to the two older age groups, the 6-year-olds were less likely to locate all the advertisements when the pages included more than one advertisement. In other words, the 6-year-olds may have made less extensive searches of the Web pages than the older children.

To find out if the position of an advertisement had an effect on children's performance we compared the accuracy of children's identifications when an advertisement appeared in the top, middle or bottom rows of the Web page. We also compared performance on advertisements in the left hand, middle and right hand columns of the Web page. Over all the web pages there was a mean of 9 advertisements in any one row or in any one column.

A 3 age (6-, 8-, and 10-year-olds) x 3 rows (top, middle, bottom) ANOVA was carried out. The age effect was as reported above. There was a main effect of location, $F(2, 316) = 6.77$, $p < .01$, partial $\eta^2 = .04$. Children were more likely to recognize advertisements on the bottom row (mean percentage correct = 54%) than other rows (top row mean = 49% and middle row mean = 53%). There were significant differences between top and middle row (t = 2.65, df = 160, p < .01) and between top and bottom row (t = 3.765, df = 160, p < .001). There was no interaction between location and age: $F(4, 316) = 1.16$, $p > .05$, partial $\eta^2 = .02$.

A 3 age groups x 3 columns (left, middle and right) ANOVA was also carried out. The age affect was as before. The main effect of column was not

significant $F(2, 316) = .297$, $p > .05$, partial $\eta^2 = .002$, but the interaction between column and age was significant: $F(4, 316) = 2.58$, $p < .05$, partial $\eta^2 = .03$. Both the 6- and the 10-year-olds recognized advertisements equally correctly in all three columns (6-year-olds' mean percentage correct for left column = 29%, middle = 31% and right = 27%; 10-year-olds' mean correct for left = 72%, middle = 75% and right = 73%). But 8-year-olds were more likely to identify advertisement located in the left column (mean percentage correct = 60%) than in the middle (mean correct = 51%, t = 2.47, df = 52, p < .05), but there was no difference between left and right columns (mean percentages = 57%).

After the Web pages task children were asked to draw advertisement(s) on sheet of A4 paper. Children's drawings were coded as in Experiment 6.

Age	Mean number of advertisements drawn	Range	Mean of total area (cm^2)	Range (cm^2)	Mean size of advertisements (cm^2)	Range (cm^2)
6 yrs	1.01	1 - 2	33.3	0.5 – 218	33.0	0.5 – 218
8 yrs	1.09	1 - 4	40.1	0.5 - 314	36.2	0.5 - 314
10 yrs	1.02	1 - 2	61.5	8- 415	61.0	8 - 415

Table 9.8. Means and ranges for number of advertisements, total area, and size of advertisements drawn by each age group.

One-way ANOVAs were carried out on the data in table 9.8. There was no difference between the numbers of advertisements drawn by each age group ($F(2,158) = 1.29$, $p > .05$, partial $\eta^2 = .9$). There was a significant effect for the total area drawn $F(2,158) = 3.95$, $p < .05$, partial $\eta^2 = .048$. The 10-year-olds covered a larger area than the 6-year-olds (t = 2.98, df =50, p < .01) but there were no differences between the 6- and 8-year-olds or between the 8- and 10-year-olds. There was also a significant effect for the mean size of the advertisements ($F(2,158) = 4.61$, $p < .05$, partial $\eta^2 = .06$). The total area of regular A4 paper is 624 cm. The 6-year-olds used 5% of the paper, the 8-year-olds used 6%, and the 10-year-olds used 10%. The 10-year-olds drew larger advertisements than the 6-

year-olds $t = 2.04$, $df = 50$, $p < .01$ and 8-year-olds ($t = 2.07$, $df = 50$, $p < .05$) but there was no difference between 6- and 8-year-olds.

As in Experiment 6, we divided the A4 sheet of paper into 9 equal boxes to investigate if children have any preferences toward certain spaces for where they put the advertisements. We did not carry out any formal analyses on the position of the drawings because children drew different numbers of advertisements on the page, however, the figures in table 9.9 suggest that overall, children preferred to put advertisements in the top or middle of the page and avoided putting advertisements at the bottom of the page.

AGE	LOCATION								
	Top left	Top middle	Top right	Middle left	Middle middle	Middle right	Bottom left	Bottom middle	Bottom right
6-year-olds	17	20	12	21	31	16	9	6	6
8-year-olds	12	20	15	15	32	14	5	6	9
10-year-olds	23	28	17	23	35	17	7	11	7
Total	52	68	44	59	98	47	21	23	22

Table 9.9. Total number of advertisements drawn in each of the 9 places on the A4 sheet.

9.8 Discussion

In Experiment 7 the adults were almost perfectly accurate in identifying all the advertisements on the Web pages and adults never incorrectly identified a non-advertisement as an advertisement (i.e. made a false positive judgement). In contrast, the children performed poorly. The 6-year-olds identified only a quarter of the advertisements, the 8-year-olds identified about half the advertisements, and the 10-year-olds identified three-quarters of them. All three age groups made false positive identifications, and both the 6- and 8-year-old groups made more false positive responses than correct identifications. The poor performance of the children, especially the younger ones (6- and 8-year-olds) stands in contrast to

children's ability to identify advertisements on television by 5 years of age (Butter, et al., 1981; Levin et al., 1982).

The results from Experiment 7 suggest that the ability to identify advertisements is dependent on the type of media containing the advertisements. This is a finding that has not been pointed out before, because all previous research has been about children's recognition of television advertising. Finding that children, even up to the age of 10 years have difficulty identifying advertisements on Web pages has implications for describing the sequence of children's understanding of advertisements. All descriptions of this sequence have been based on children's understanding of television advertising (Kunkel et al. 2004), and have stressed that children's recognition of television advertisements (by 5 years of age) occurs at least 2 or 3 years before children become aware of persuasive intent (about 7 or 8 years of age). However, in Experiment 7 children who were old enough to be aware of persuasive intent (8 or 10 years of age) were unable to recognize Web page advertisements. In other words, for television children can recognize advertisements before they understand the purpose of advertising, but for Internet advertising children may be aware of the purpose of advertisement before they can recognize them. This, in turn, may have implications for the effects of advertising on children, and for regulation, because children are being exposed to advertisements on the Internet without being aware that what they are looking at are advertising messages. This is a point that we will discuss further after Experiment 8 (in the next chapter).

In Experiment 7 we tried to find out where children expected advertisements to occur on a Web page. In the pointing task there was a tendency for children to be more accurate at recognizing advertisements in the bottom third of the page. In contrast, in the drawing task children preferred to draw advertisements in the top two-thirds of the page (see table 9.9). However, it may be the case that the drawing is not a valid way of assessing where children think that an advertisement will occur on a Web page. As we noted in the discussion of Experiment 6, when children are asked to draw the position of advertisements they may have been drawing where they saw advertisements in the first part of the

experiment (i.e. the recognition task) rather than where they actually thought advertisements might be found on a page. There is some evidence that this was happening by comparing the results of the drawing task in Experiment 6 (table 8.7) and Experiment 7 (table 9.8). In the recognition task in Experiment 7 children saw, on average, fewer advertisements per page than in Experiment 6, and also they saw, on average, smaller advertisements than in Experiment 6. We note that when children were asked to do the drawing task in Experiment 7, they drew fewer advertisements per page and they also drew smaller advertisements. Such a comparison is not conclusive, but does suggest that the children's previous experience of advertisements in the recognition task might have influenced how they drew advertisements in the drawing task. One way to avoid this possibility would be to give children a drawing task either on its own, or before, they did other tasks involving Web advertisements. This would be a topic for future research.

In the next study, Experiment 8 we repeated Experiment 7 with a sample of children (6-, 8- and 10-year-olds) in Indonesia. The main purpose of Experiment 8 was to establish whether the results from Experiment 7 generalised to a different sample. In Experiment 7 the oldest children (10-year-olds) were not at ceiling and therefore in Experiment 8 we included a further age group, of 12-year-old children.

If the results from Experiment 7 generalised we expected to find an age related improvement in the ability of Indonesian children to recognize Web page advertisements. The majority of children in Experiment 7 had access to the Internet and said they had used it (see table 9.3). However, the proportion of children in Indonesia with experience of the Internet was much lower than the proportion of UK children in Experiment 7 with Internet experience. On the one hand if past experience of the Internet is an important factor in recognizing advertisements we expected that the performance of each Indonesian age group would be lower than the performance of equivalent UK age groups in Experiment 7. On the other hand, some researchers have suggested that children's understanding of advertisements is more closely related to children's age (i.e. their

cognitive development) than it is to their experience (Gunter et al., 2005). For instance, children with learning difficulties demonstrate an awareness of television advertising commensurate to their mental age (i.e. cognitive ability) irrespective of the number of years (i.e. experience) they have had watching television advertising (Blades, 2007). If age is more important than experience for recognizing Web advertisements we expected the Indonesian children would perform at similar levels to the UK children in Experiment 7.

In Experiment 7 only the 10-year-olds seemed to benefit from the inclusion of price information, because they were the only age group that identified advertisements with prices better than ones without prices. The presence of a price had no effect on the 8-year-olds' performance, and unexpectedly we found that 6-year-olds recognized fewer advertisements that included a price than ones that did not. In other words, the inclusion of a price did not help the younger children to identify an advertisement. As pointed out above, the younger children may have a less developed understanding of the relationship between prices and products (Leiser, Sevón & Lévy, 1990) and the 6-year-olds may not always have recognized the numbers or currency signs as prices (Nunes & Bryant, 1996). In Experiment 8 the UK prices were changed into Indonesia currency (Rupiah) that was indicated by a currency sign (Rp). Currency signs are not explicitly included in the Indonesian curriculum until the age of 8 years (Departemen Pendidikan National Indonesia, 2006), which is slightly later than currency signs are taught in the UK curriculum. As the younger UK children did not benefit from the presence of price information we did not expect the younger Indonesian children would benefit either.

CHAPTER 10

EXPERIMENT 8

10.1 Introduction

In Experiment 8 we repeated Experiment 7 with 6- to 12-years olds in Indonesia. At the time of the study (2006) Internet use was still relatively new in Indonesia. The demand for computers in Indonesia has been increasing since and in 2007, it was estimated that 6.5 million personal computers were sold in Indonesia (Sekretariat Negara Republik Indonesia, 2007). This was a small number compared to the total population (224 million in 2007). Computers are relatively expensive in Indonesia, because the price of a personal computer is more than the average monthly income of a working class wage (Hill and Sen, 2005) and Internet subscriptions are expensive (Sekretariat Negara Republik Indonesia, 2007; Telkom, 2008). Nonetheless the number of Internet users in Indonesia has increased every year and by 2007, it was estimated that 20 million people (mostly located in and around Jakarta) accessed the Internet (Sekretariat Negara Republik Indonesia, 2007).

Children in Indonesia have only limited access to the Internet. The majority of schools have computer facilities, but without Internet access. There are some schools in big cities (such as Jakarta), which may have Internet access for older children (over 10 years of age) who are allowed to use the Internet during lessons (Departemen Komunikasi dan Informatika Republik Indonesia, 2006). As far as we know there has not been any previous research into children's awareness of Internet advertising in Indonesia and there is little information about Indonesian children's Internet use. Therefore we used a questionnaire in Experiment 8 like the questionnaire in Experiment 7 to find out about children's access to computers and the Internet. We expected the Indonesian children to have much less access to the Internet than children in the UK.

As discussed at the end of Experiment 7, the Indonesian children's lack of Internet experience may mean that they are poorer (than UK children) at identifying advertisements on Web pages. An alternative view (Gunter et al., 2005) is that children's ability to recognize advertisements in any one medium, like the Internet, is related to children's age. In other words, children of the same age will perform in similar ways and their performance might be independent of the amount of experience they have had. Therefore, we did not make a specific prediction about whether the Indonesian children would perform differently from the UK children in the recognition task.

However, in one way we did not expect there to be differences between Indonesian and UK children. In Experiment 7, the 6- and 8-year-old UK children did not benefit from the presence of a price being included in an advertisement, and it was only the 10-year-olds who were able to recognize advertisements with a price better than ones without a price. We assumed therefore that it would also be only the older children in Indonesia who benefited from the presence of a price to help them identify an advertisement. As we included both 10- and 12-year-olds in Indonesia in Experiment 8, we expected that both these age groups would recognize advertisements with a price better than advertisements without a price.

10.2 Participants

Two hundred and forty children aged 6 to 12 years were included in Experiment 8. They were divided into 4 age groups with the mean age 6 years 3 months (with age range 6.00 – 6.11), 8 years 3 months (8.00 – 8.11), 10 years 4 months (10.00 – 10.11) and 12 years 3 months (12.00 - 12.11). The children were recruited from three private schools in the Jakarta area, Indonesia. Children came from lower, middle and upper class families. In two of the three private schools Bahasa Indonesia was used and in another the first language was English.

10.3 Materials

The materials that were used on the experiment were the same 27 Web pages with the same layout and the same advertisement(s) as in Experiment 7. However, the Web page content was translated into Bahasa Indonesia. The Experimenter made the first translation of the Web pages and then asked a lecturer who was fluent in both languages to check the translation. 27 Web pages in Bahasa Indonesia were used in the experiment. Indonesian children would not have seen some of the products advertised on the Web pages (e.g. McVities, Dr. Who, McCoys).

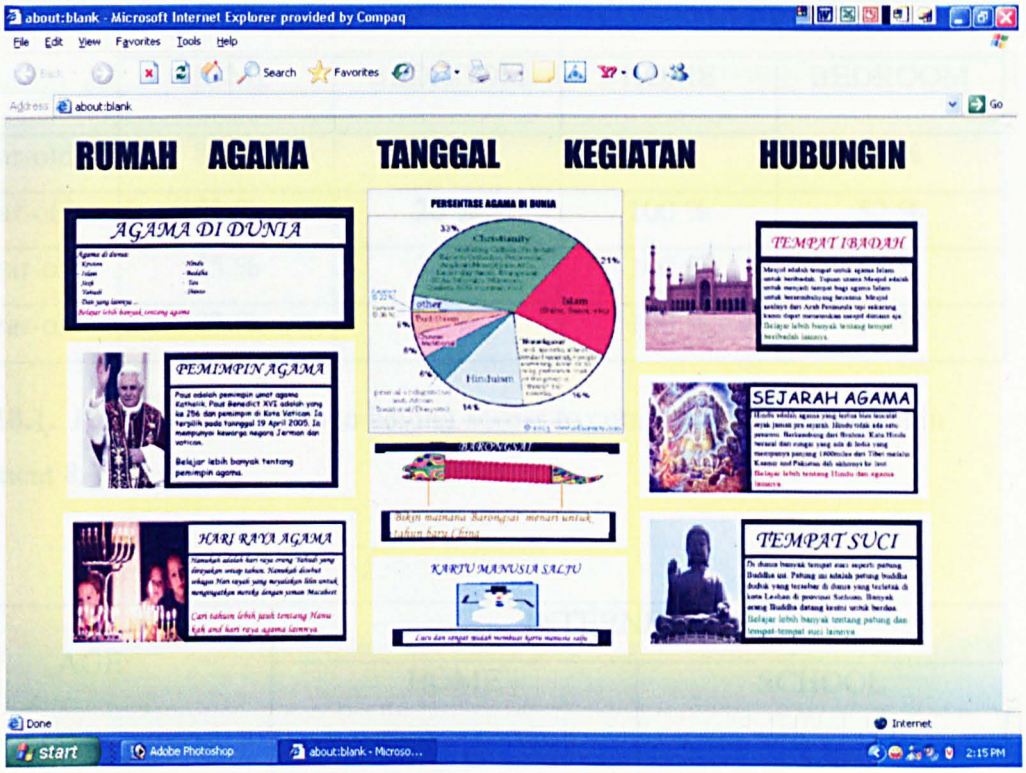

Figure 10.1. Web page without advertisement in Bahasa Indonesia.

10.4 Procedure

The procedure used was same as in Experiment 7, children were first asked several questions regarding their use of computers and the Internet. Then they were asked to do the recognition task and the drawing task following the procedure in Experiment 7. Children were tested individually using Bahasa

Indonesia in 2 schools. English instructions were used in one of the schools because Bahasa Indonesia was not allowed in the school environment.

10.5 Results

The percentages of children having computers and televisions at home and in their bedroom (questions 1, 2, 8 and 9) are shown in table 10.1, and the children's use of computers (questions 3 and 4) is shown in table 10.2. Table 10.3 summarizes children's responses to question 6, about their activities on the Internet.

AGE	COMPUTER		TELEVISION	
	HOME	BEDROOM	HOME	BEDROOM
6-year-olds	85 %	22 %	98 %	80 %
8-year-olds	82 %	20 %	100 %	52 %
10-year-olds	85 %	37 %	100 %	58 %
12-year-olds	87 %	27 %	100 %	37 %

Table 10.1. Percentage of children having access to computers and television in Experiment 8.

AGE	INTERNET USE	
	HOME	SCHOOL
6-year-olds	37 %	5 %
8-year-olds	37 %	30 %
10-year-olds	33 %	27 %
12-year-olds	52 %	22 %

Table 10.2. Percentage of children using the Internet at home and at school in Experiment 8.

AGE	CHILDREN'S ACTIVITIES ON INTERNET					
	Play game	Homework	Research	Browsing	Email	Other
6-year-olds	28 %	7 %	5 %	3 %	2 %	7 %
8-year-olds	27 %	7 %	22 %	10 %	7 %	7 %
10-year-olds	22 %	2 %	28 %	13 %	18 %	12 %
12-year-olds	22 %	10 %	37 %	20 %	28 %	17 %

Table 10.3. Children's activities on the Internet (for a description of the categories.

Most of the children in Indonesia had a computer and a television at home, but only a small percentage had Internet access at home or school. Compared to children in the UK (table 9.2) the Indonesian 6- to 10-year-olds had as much access to computers (overall, 84% had computers) as did the UK children (86% with computers), but far fewer had used the Internet than had the UK children (table 9.3). Home Internet use by the 6- to 10-year-old Indonesian children was, overall, 36%, and nearly twice as much (66%) for the UK children. Access to the Internet at school was 21% for the Indonesian children and was 78% for the UK children.

Age	Total number of points	Mean
6-year-olds	1892	31.53
8-year-olds	1687	28.17
10-year-olds	1486	24.77
12-year-olds	1568	26.13

Table 10.4. Total and mean number of point in each age group in Experiment 8.

The total number, and the mean number of points per child for each age group of children regardless of whether the point was correct or incorrect is shown in table 10.4. A one-factor ANOVA was conducted. There was a difference in the total number of points between the age groups ($F(3,236) = 3.76$, $p < .05$, partial

η^2 = .046) and a Bonferroni post-hoc test showed that the 6-years-old made more points than 10-year-olds ($p < .05$). There were no differences between the 6-year-olds and the 8- or 12-year-olds ($p > .05$), or between the 8-year-olds and the 10- and 12-year-olds ($p > .05$), or between the 10-year-olds and 12-year-olds ($p > .05$).

AGE	NO PRICE (n = 14)	PRICE (n = 13)	MEAN TOTAL (n = 27)
6-year-olds	35 %	29 %	32 %
8-year-olds	54 %	54 %	54 %
10-year-olds	65 %	76 %	70.5 %
12-year-olds	71 %	84 %	77.5 %

Table 10.5. Percentage of correct advertisement identifications for each age group and condition.

Table 10.5 shows the percentage of advertisements identified correctly by each age group. A 4 age group (6-, 8-, 10-, and 12-year-olds) x 2 price (advertisement with price and without price) ANOVA was carried out. The effect of age was significant: $F(3,236) = 100.98$, $p < .001$, partial $\eta^2 = .56$ and Bonferroni post-hoc test showed that the 12-year-olds and 10-year-olds recognized more advertisements than the 6-year-olds ($p <. 001$) and the 8-year-olds ($p <. 001$). The 8-year-olds were better in identifying advertisements than were the 6-year-olds ($p < .001$). There was no difference between the 10- and 12-year-olds ($p > .05$).

There was a main effect for price ($F(1,236) = 9.23$, $p < .01$, partial η^2 = .038). Children were more likely to identify an advertisement with a price than one without a price ($t = 2.86$, $df = 239$, $p < .01$), but the age x price interaction was also significant ($F(3,236) = 11.27$, $p < .001$, partial $\eta^2 = .125$). The 6-year-olds were more likely to point to advertisements without a price than ones with a price ($t = 2.63$, $df = 59$, $p < .05$). In contrast, 10- and 12-year-olds were more likely to identify an advertisement with a price than one without ($t = -3.88$, df =

59, $p < .001$ for 10-year-olds, and $t = -5.50$, $df = 59$, $p < .001$ for 12-year-olds). There was no significant difference for the 8-year-olds' performance on advertisements with and without prices ($t = .06$, $df = 9$, $p > .05$).

As in Experiment 7, if children pointed to a non-advertisement as an advertisement then children were said to make a false positive identification. The mean number of false positives (out of a maximum possible of 216) by each age group was: 6-year-olds, 22.82; 8-year-olds, 13.58; 10-year-olds, 5.75 and 12-year-olds, 5.17. There was a difference between the age groups, $F(3,236) = 33.12$, $p < .001$, $\eta^2 = .3$ and Bonferroni post-hoc tests showed that the 6-year-olds ($p < .001$) and the 8-year-olds ($p < .05$) made more false positives than the 10-year-olds and 12-year-olds and 6-year-olds ($p < .001$) made more false positives than 8-year-olds. There was no difference between the 10- and 12-year-olds ($p > .05$).

A d-prime analysis was run to consider both correct 'hits' and incorrect 'false positives'. The mean of d-prime for each age group was .89 (age 6), 1.84 (age 8), 3.13 (age 10) and 3.28 (age 12). A one-factor ANOVA was carried out on the d-prime score and there was a difference $F(3,236) = 76.91$, $p < .001$, partial $\eta^2 = .41$ between the age groups. A Bonferroni post-hoc test showed that the 10-year-olds and the 12-year-olds were better in identifying between advertisements and non-advertisements than the 6-year-olds ($p <. 001$) and the 8-year-olds ($p < .001$), and the 8-year-olds were better than the 6-year-olds ($p < .001$). There were no difference between the 10-year-olds and the 12 year-olds in performance on recognizing advertisement and non-advertisements. The results from the d-prime analysis were the same as the results from the recognition scores (table 10.5) and therefore there was no indication that the recognition scores were influenced by different pointing strategies by different age groups. In other words, the recognition scores can be taken as a valid measure of the children's performance.

Age	No advertisements	1 advertisement	2 advertisements
6-year-olds	0.70	1.28	1.52
8-year-olds	0.46	1.12	1.54
10-year-olds	0.21	0.89	1.66
12-year-olds	0.16	0.96	1.79

Table 10.6. Percentages of mean number of pointing to the Web pages.

Children's recognition of advertisements on the different Web pages was also investigated. A 4 age group (6-, 8-, 10- and 12-year-olds) x 3 type of Web page (no advertisement, one advertisement and two advertisements) ANOVA was run. The main effect for type of page was significant $F(2,472) = 857.27$, $p < .001$, partial $\eta^2 = .78$, and there was a significant interaction between age and type of Web pages $F(6,472) = 20.28$, $p < .001$, partial $\eta^2 = .205$. This interaction was because the age groups performed similarly when identifying advertisements on the pages with 1 or 2 advertisements, but on pages with no advertisements there was an age related improvement. As children became older they were less likely to think that there were advertisements on the page with no advertisements.

An ANCOVA analysis was carried out to identify whether there was any relationship between the number of times children went to the Internet (i.e. at home and school) per week and the number of correct points they made. There was no significant effect of the between subject factor for number of times on the Internet at home ($F(1,228) = .702$, $p > .05$, partial $\eta^2 = .003$) or number of times at school ($F(1,228) = .17$, $p > .05$, partial $\eta^2 = .001$).

As in Experiment 7, we compared the accuracy of children's identifications when an advertisement appeared in the top, middle or bottom rows of the Web page to investigate if the position of an advertisement had an effect on children's performance. We also compared performance on advertisements in the left, middle and right hand columns of the Web page. There was an average of 9 advertisements in any one row or in any one column.

A 4 age group x 3 row (top, middle and bottom) ANOVA was carried out. The age effect was as reported above. There was a main effect of location ($F(2,472) = 22.58$, $p < .001$, partial $\eta^2 = .09$). Children were more likely to recognize advertisements in the middle row (mean percentage correct = 63%) than in other rows (top row mean = 54% and bottom row mean = 61%). There were significant differences between the top and middle rows ($t = 6.18$, $df = 239$, $p < .001$) and between the top and bottom rows ($t = 5.27$, $df = 239$, $p < .001$). The interaction between age and location was significant $F(6,472) = 3.28$, $p < .01$, partial $\eta^2 = .04$). 12-year-olds were more likely to recognize an advertisement in the bottom than in the middle row ($t = 2.08$, $df = 59$, $p < .05$). Ten-year-olds were less likely to recognize an advertisement located in the top row than in the middle ($t = 2.98$, $df = 59$, $p < .01$) or bottom rows ($t = 2.74$, $df = 59$, $p < .01$). Eight-year-olds were more likely to identify an advertisement in the middle than in the top ($t = 5.26$, $df = 59$, $p < .001$) or bottom rows ($t = 2.55$, $df = 59$, $p < .05$), and there was a difference between top and bottom rows ($t = 2.99$, $df = 59$, $p < .01$). Six-year-olds were more likely to recognize advertisements in the middle than in the top row ($t = 4.47$, $df = 59$, $p <. 001$) and they were more likely to identify advertisements in the bottom than the top rows ($t = 2.68$, $df = 59$, $p < .05$), but there no was difference between the middle and bottom rows ($t = .68$, $df = 59$, $p < .05$). In summary, there was a bias for most age groups to identify advertisements most often in the middle row (6-, 8-, and 10-year-olds), though the 12-year-olds were more accurate at recognising advertisement in the bottom row. This might suggest that older children were less biased to looking at the middle of the web page.

A 4 age group x 3 column (left, middle and right) ANOVA was run. There was no main effect on location $F(2, 472) = 1.40$, $p < .05$, partial $\eta^2 = .006$ and there was no significant interaction between location and age $F(6, 472) = .60$, $p < .05$, partial $\eta^2 = .008$. The age effect was as reported above.

Children were asked to draw advertisement(s) on sheet of A4 paper after the recognition task. Children's drawings were coded as in Experiment 6.

	Mean of number of advertisements	Range	Mean of total area (cm^2)	Range (cm^2)	Mean size of advertisements (cm^2)	Range (cm^2)
6 yrs	1.05	1 - 4	43.1	1.6 - 502	40.1	1.6 – 502
8 yrs	1.02	1 - 2	68.0	1.8 - 460	66.7	1.8 - 460
10 yrs	1.07	1 - 3	63.4	3.1 - 422	59.3	3.1 - 422
12 yrs	1.03	1 - 2	72.2	4.2 - 423	70.1	4.2 - 423

Table 10.7. Means and ranges for number of advertisements, total area, and size of advertisements drawn by each age group.

A one-way ANOVA to compare age groups showed no effect for total area ($F(3,236) = 1.31$, $p > .05$, partial $\eta^2 = .02$); no effect for number of advertisements drawn ($F(3,236) = .34$, $p > .05$, partial $\eta^2 = .004$), and no effect for the mean size of the advertisements ($F(3,236) = 1.23$, $p > .05$, partial $\eta^2 = .02$). In other words, there were no age differences for the measures used to assess the children's drawings.

As in Experiment 7, we divided the sheet of A4 (landscape format) into 9 equal rectangles (3 x 3) to investigate whether children had any preferences for where they placed advertisements (see table 10.8). We did not carry out any further analyses because children could draw as many advertisements as they wanted. There was a tendency for all age groups to draw advertisements more often in the top third and middle third of the page, and to draw less advertisements in the bottom third.

AGE	LOCATION								
	Top left	Top middle	Top right	Middle left	Middle middle	Middle right	Bottom left	Bottom middle	Bottom right
6yrs	13	17	13	24	30	14	7	9	11
8yrs	24	24	11	29	41	17	11	11	9
10yrs	25	26	23	25	42	22	12	9	9
12yrs	31	28	21	32	36	18	10	9	11
Total	93	95	68	110	149	71	40	38	40

Table 10.8. Total number of advertisement drawn in each of 9 places on the A4 sheet.

We also compared the performance of children in the UK (Experiment 7) with the performance of children in Indonesia (Experiment 8). Percentages of correct identifications are shown in table 10.9.

	UK	INDONESIA
6-year-olds	28 %	32 %
8-year-olds	56 %	54 %
10-year-olds	73 %	70 %

Table 10.9. Percentage of correct identifications for UK and Indonesian children.

A 3 age group (6-, 8-, and 10-year-olds) x 2 nationality (UK and Indonesia) ANOVA on correct identification was carried out. The effect of age was significant: $F(2,335) = 154.93$, $p < .001$, partial $\eta^2 = .48$. A Bonferroni post-hoc test ($p < .001$) showed that the 10-year-olds (mean percentage, 72%) recognized more advertisements than the 8-year-olds (mean 55%), and the 6-year-olds (mean 30%). The 8-year-olds identified more advertisements than the 6-year-olds. But there was no effect for nationality, $F(1,335) = .05$, $p > .05$, partial $\eta^2 = .832$, and there was no age x nationality interaction $F(2,335) = 1.29$, $p > .05$, partial $\eta^2 = .278$. Therefore there were no differences in correct identification between Indonesian and UK children.

10.6 Discussion

The results of Experiment 8 with Indonesian children were the same as the results from Experiment 7 with UK children. There was an age related improvement in the children's ability to recognize the Web page advertisements, and the mean number of advertisements recognized by the 6-, 8- and 10-year-old groups in Indonesia and the same groups in the UK was very similar. The similarity of performance was noteworthy because the number of children in Indonesia with Internet experience was much lower than the number of children in the UK with Internet experience. Despite the fact that the Indonesian age groups included fewer children with Internet experience the performance of the children in both countries was almost the same. This finding provides some support for the argument that age is a factor in recognizing advertisements irrespective of children's specific experience with the Internet. However, in the present experiments we were primarily concerned with the age when children could distinguish advertisements from non-advertisements, and further research would be needed to explore the effects of experience on children's ability, by selecting specific groups of children with and without experience of a medium to investigate whether recognition differed depending on experience of that medium.

Like the 6-year-olds in the UK, the 6-year-olds in Indonesia were poorer at recognising advertisements with prices than without prices, and like the 8-year-olds in the UK, the inclusion of a price did not have a beneficial effect on Indonesian 8-year-olds' ability to identify an advertisement. It was only by the age of 10 years that children in Indonesia were better at identifying advertisements with prices (as were the 10-year-olds in the UK). Therefore, the age related pattern of performance in the UK and in Indonesia was the same, because in both countries children only benefited from the presence of price information at the age of 10 years. We concluded that for younger children price did not provide an effective cue for identifying an advertisement.

Taken together the results of Experiment 7 and 8 suggest that children have difficulty identifying Web page advertisements. The 6- and 8-year-olds were

particularly poor at identifying the Web page advertisements. Even the 10-year-olds recognized only about three-quarters of the advertisements. As the 10-year-olds were not at ceiling we included 12-year-olds in Experiment 8, but there was no difference between the 10- and 12-year-olds in Experiment 8. Therefore the performance of even the oldest children was not as good as adults who (in Experiment 7) performed the recognition task almost perfectly. The advertisements we used in the experiment were taken from, or adapted from, advertisements on Web pages aimed at children, and therefore the children's inability to identify them all as advertisements has implications that we will consider below.

10.7 General discussion of Experiments 6-8

Conclusions drawn from television research suggest that the first stage of understanding advertisements is the ability to distinguish an advertisement from its context (Kunkel et al., 2004; Gunter et al., 2005). Children can distinguish television advertisements from the surrounding programmes by the age of 5 years (Butter et al., 1981; Levin et al., 1982; Bijmolt et al., 1998). However, there had been almost no research into children's understanding of advertisements in new media such as the Internet (Neeley, 2007). Experiments 6 to 8 were the first to investigate children's recognition of Web page advertisements, and the main results of these three experiments are summarized in table 10.10.

	Experiment 6 real Web pages UK	Experiment 7 invented pages UK	Experiment 8 invented pages Indonesia
6-year-olds	16 %	28 %	32 %
8-year-olds	21 %	56 %	54 %
10-year-olds	32 %	73 %	70 %
12-year-olds	-----	----	78 %

Table 10.10. Percentages of advertisements correctly identified in Experiments 6 to 8 on Web pages.

Overall, our experiments showed that children have difficulty distinguishing an advertisement on a Web page. Therefore, our findings do not support the recognition research with television advertisements, because children were much older before they could recognize Web page advertisements. There may be several reasons for this difference. Children have extensive experience of television from a very early age (Kunkel et al. 2004), but will not usually have much experience of the Internet until later. Nevertheless, we found that even 10- and 12-year-olds were unable to identify all the Web advertisements. This is many years after such children would have been able to identify a television advertisement. We suggest that this difference may be due to the different nature of television and Web advertisements.

Our experiments showed there was no relationship between the number of times children logged onto the Internet per week and their ability to recognize advertisements on the Internet. In other words, children who logged in to the Internet more frequently in a week found it as difficult to recognize advertisements in the Web pages as children who were less likely to go to Internet. We suggest this might be because our measurement is not as accurate as it could be. Children in our experiment were only asked to note the number of times they went to Internet, but not to indicate the number of hours they spent on the Internet. Logging in to the Internet more often in a week may not mean that more hours have been spent online. Future research will be needed to take into account not only the number of times that children go to the Internet but also the length of time they spend on the Internet.

As we noted in Experiment 7, television advertisements can be distinguished by a number of internal and contextual cues, such as jingles, voice-overs, pacing, price information, length, separators, and contrast with the surrounding programme. Most importantly, a television advertisement cannot be on the screen at the same time as a programme. But many Web advertisements are just part of a Web page, and the advertisement may include images and text styles that are not very different from the ones that make up the rest of the page (Fielder

et al., 2008) so there are fewer distinct cues that can be used to identify a Web advertisement.

One cue that is associated with some Web advertisements is price information, and we found that when an advertisement included a price the older children (10- and 12-year-olds) were more likely to identify it correctly. Older children have a better understanding of the relationship between products and prices (Gunter & Furnham, 1998; Leiser, Sevón & Lévy, 1990) and may have learnt the association between the presence of a price and an advertisement from seeing advertisements in various media. They may also have a developing awareness of consumerism and realize that advertising and pricing are related aspects of selling products (Leiser & Halachmi, 2006; Thompson & Siegler, 2000). We considered only one possible cue (the presence of price) and other research would be necessary to identify other cues that children might use to identify a Web advertisement. Further research could also include the use of on line Web pages so that the possible effects of features like animation in advertisements could be investigated.

The fact that children can identify an advertisement does not mean that they understand the nature of advertising. A full appreciation of the persuasive nature of advertising is not achieved until 7 or 8 years of age, which is at least 2 years after children can consistently identify television advertisements (Kunkel et al. 2004). The development of children's understanding has always been described as recognition first, then progressively more sophisticated awareness of advertising, until a full realization of the persuasive intent of advertising is achieved (Gunter et al. 2005). But this developmental sequence has been based on research related to television advertising. As we found, children who were old enough (10 and 12 years of age) to understand the purpose of advertising could not always identify an advertisement on a Web page, and therefore the assumption that recognition always precedes understanding may not apply to media other than television. If children who are old enough to understand the nature of advertising are unable to recognize advertisements this indicates that such children lack the strategies needed to identify what is and what is not a Web advertisement.

We have already suggested that the cues that might help children identify an Internet advertisement are less obvious than the cues related to advertisements in other media like television, and there is a further difficulty in the case of Internet advertising because the whole of many Web pages are advertisements (Austin & Reed, 1999; Fielder et al., 2008). Companies, institutions, and individuals create Web pages to promote themselves, their brand or their products and therefore most pages are in effect advertising messages, and none of the content is neutral or unbiased. As yet, we do not know when children reach a full understanding about the nature of Web pages.

An assumption in the literature on television advertising is that when children are aware of the persuasive nature of advertising that awareness allows them to make a 'critical' response. Such a response is one when children have become critical about the claims put forward in an advertisement. It is also assumed that a critical response will lessen the impact of the persuasive message (Kunkel et al. 2004). But these assumptions depend on children knowing that they are looking at an advertisement, because only then can children generate the critical response.

If, as we found in Experiments 6 to 8, children do not recognize a Web page advertisement they may not generate a critical response. But if children do not generate a critical response they may be susceptible to the effects of the Internet advertising in the same way that they can be influenced by product placements. For example, Auty and Lewis (2004) found that children who were shown a film clip that included a Pepsi drink were, later, more likely to choose Pepsi to drink themselves even though they did not recall seeing the drink in the film. Studies with adults have also demonstrated that participants can develop preferences for products they have seen advertised even when they are unaware that they have been exposed to the advertisements (Perfect & Askew, 1994). Investigating the effects of advertisements that are not actually recognized as advertisements is an issue for future research.

Children's difficulty in recognising the Web page advertisements has implications for regulation. Most countries regulate the type and frequency of television advertisements that can be directed at children and some countries (like Sweden) ban television advertising aimed at young children (Gunter et al., 2005). Although national governments can control the television advertising within their borders, the Internet is an international medium that cannot be regulated very easily (Neeley, 2007).

Children's difficulty in recognising advertisements on Web pages also has implications for educating children about advertising. Children could be made more aware of Internet advertising by teaching them to identify advertisements on Web pages. However, at the moment we do not know what cues children try to use when they are asked to identify a Web advertisement. The results from Experiments 6 to 8 suggest that children may use the wrong criteria to identify advertisement. For example, in Experiment 6 the children were more likely to recognize an advertisement if it was comparatively large (rather than small). This may mean that children may fail to notice small advertisements. There was also some evidence from both the pattern of children's pointing and their drawings (in Experiments 6 to 8), that many children believed that advertisements occurred mainly in the upper part of a Web page and therefore they might be less aware of advertisements near the bottom of the page.

Therefore, educating children to recognize Internet advertisements may involve two parts. First, finding out what strategies children actually use to recognize advertisements, and if necessary, correcting strategies (like the ones above) that are incorrect. Second, working out effective ways to help children identify Web advertisements (e.g. by teaching them that a price label usually indicates an advertisement). However, as yet we know very little about how children try to identify advertisements, and this will be a matter for future research. We have demonstrated (in Experiments 7 and 8) how an analysis of children's pointing might indicate some of children's assumption about where an advertisement is likely to be on a Web page. We also used a drawing task to try and find out more directly where children expected advertisements to be on a Web

page. However, as we pointed out in Experiment 7 the way that children did the drawing task in our experiments might have been confounded by the fact that children had done the pointing task just before. So when children did their drawings they may have been drawing what they had just seen in the experiment. A better way to carry out the drawing task would be to give it to children separately from any other task, and this might make it a more useful measure of children's assumptions about the position of Web page advertisements. All these issues are matters for future research.

CHAPTER 11

Discussion

11.1 General discussion

This thesis has focused on children's ability to understand the persuasive intent of advertisements (chapters 3-7) and their ability to recognize advertisements (chapters 8-10) in Western and non-Western countries. Kunkel el al (2004) suggested that to understand advertising children required two skills, the ability to distinguish an advertisement from its surrounding context, and the ability to understand the persuasive message of the advertisement.

Studies of children's understanding of persuasive intent have been carried out since the 1970s with most researchers using verbal, rather than non-verbal methods, These have shown that children develop the ability to appreciate persuasive intent of from about 7 or 8 years of age (Gunter et al., 2005; Kunkel et al., 2004). However, a few researchers (Donohue et al., 1980; Macklin, 1985; 1987; Bijmolt et al., 1998) used non-verbal methods and have claimed that, with such measures, children younger than 7 years can demonstrate a knowledge of persuasive intent. But as we pointed out in chapter 3, the non-verbal tasks (which involved pointing to pictures of shopping after watching television advertisements) only showed that children who had seen an television advertisement associated that advertisement with a shop, and did not in itself indicate anything about young children's understanding of persuasive intent. Nonetheless, the non-verbal studies have often been cited as a way to criticise the use of verbal tasks and to argue that verbal tasks underestimate children's knowledge about advertising. As we also pointed out in chapter 3, there were several methodological limitations in the way that non-verbal studies have been conducted. For example, previous researchers did not control the attractiveness of the pictures that were shown to children, did not always randomise the presentation of the pictures, and did always consider chance effects. When such factors were taken into account in our studies (Experiments 1 to 5) we did not find that young children could succeed on our non-verbal model task. This did not

support the results from previous researchers (Donohue et al., 1980; Macklin, 1985; 1987; Bijmolt et al., 1998).

In addition, we found that children who expressed a knowledge of persuasive intent in a verbal task were no more likely to pick the shop than children who did not have an awareness of persuasive intent and therefore, there was no evidence that the non-verbal measure was a valid measure of persuasive intent even for older children. Therefore the results from Experiments 1-5 do not support the idea that very young children have an awareness of persuasive intent in advertisements. They do support Kunkel et al.'s (2004) conclusion that there is no evidence that young children have little awareness about the purpose of advertising. Kunkel et al. argued that advertising aimed at children before the age of about 8 years should be banned, and there is nothing in the results of our studies to change this recommendation. In fact, our failure to find (using several variations of a non-verbal task) any evidence for young children's understanding of advertisements strengthens the case put forward by Kunkel et al. (2004).

Previous researchers who have investigated children's ability to recognize advertisements have focused on television advertising and have found that children can distinguish television advertisements successfully by the age of 5 years (see chapters 1 and 8). The focus on television advertising has meant that there has been a lack of research into other media such as the Internet, and therefore we conducted several Experiments 6-8 about Internet advertising. When we showed children (6- – 12-year-olds) printed Web pages we found that even 10- and 12-year-olds were unable to identify all the advertisements on those pages. This is therefore much later than children can identify television advertisements. As we have discussed in Chapter 10, the older children's lack of ability to identify Web page advertisements means that even when children would be expected to understand persuasive intent, they may not be able to recognize what is and what is not an advertisement. We do not know whether an advertisement that is not recognised as an advertisement will have more, or less, or the same effects on children as one that is identified as an advertisement. This may be an important area for future research as children are exposed to more and more advertising that

is not just traditional television advertising, and which may be harder for children to identify.

Piaget's stage theory of child development was developed long before research into advertising,and before television was a common medium for children to watch. However, it is the most quoted theory used to explain children's development of understanding of advertisements advertisement (Lawler & Prothero, 2002). In relation to Piaget's stages of child development, children start to understand the persuasive intent of advertisements when they are in concrete operational stage (7 to 11 years) when they develop the ability to reason and to evaluate the message of an advertisement. This suggestion is supported in the recent reviews of Kunkel et al. (2004) and Gunter et al. (2005), and in our own findings where we did not find any evidence that younger children showed an awareness of the intent of advertising.

One of the most frequently cited theories other than Piaget's is Roedder's theory of information processing which was developed specifically for advertising research. According to Roedder, children in the cued processor phase (7 to 11 years) start to develop the ability to understand what an advertisement intends if, and only if an external prompt is provided. They are unable to learn and remember relevant information regarding advertising messages (i.e. informative or persuasive messages) by themselves. Yet, according to Roedder, by repetitively training children in the processor stage on consumer literacy (i.e. product information, product appeals, product cost, and product taste) they might be helped to comprehend the intention of advertisements. Nonetheless consumer literacy will not benefit for children in limited processors phase (below 6 years) as they only have limited capacity to store or retrieve information. Consumer literacy will have less effect on strategic processors since children in the strategic processors phase (12 years above) have already acquired cognitive skills to understand the persuasive messages of advertisements. Thus, our findings also supported Roedder's proposal by showing that younger children (ones less than 7 years) had difficulty understanding the persuasive intent of advertisement and

only 8 out of 18 (8-year-olds) understood the relationship between shopping and advertisements in Experiment 2.

Therefore, Piaget's and Roedder's theories continue to provide informationto explain children's development of persuasive intent of advertisements. Nonetheless, both Piaget and Roedder theories do not apply to the development of children's ability to recognize advertisements on the Web pages. Roedder (1981) emphasized that a recognition task does not require learning processes and it is merely a recall task of what previously shown. In relation to our Experiment 6-8, we only asked children to identify advertisements on the Web pages and the tasks we used did not involve learning, it was more on the ability to recall what had previously been shown. Hence both of Piaget's and Roedder's theories have limited application in our Internet Experiment.

Piaget and Roedder put forward universal theories that should apply to the development of all children, irrespective of the culture they are brought up in, but most of the research into children and advertising has been carried out in Western countries, and all the research using non-verbal methods has been carried out in the West. Therefore Experiment 3 was the first to assess young children with a non-verbal method in a non-Western country (i.e. in Indonesia). We found that the performance of Indonesian children was similar to the performance of the UK children as would be expected if children's cognitive development is similar across cultures.

Experiment 8 was the first study to investigate non-Western children's recognition of Web page advertisements. In Experiment 8 both the level of the Indonesian children's performance and the pattern of their performance was almost the same as the performance of the UK children. This was despite large differences between UK and Indonesian children's experience on the Internet. The similarity of the results between Indonesian and UK children in Experiment 8 suggests that, irrespective of different cultural backgrounds, children of the same ages will perform at similar levels.

11.2 Limitation of Experiments

In Experiment 1 and 2, when children were asked to choose a room after seeing a television advertisement we found a slight bias for children to choose the model of the sitting room. Children in both of the experiments, especially in the control group, preferred the sitting room to the other rooms. This might be because children in the control group were associating what they saw on television with the room. Children in the control group saw a short clip of television programme. In the clip the boy presenter was visiting a viewer's (a boy and a girl's) house and the children there showed the presenter round the house. They then talked about a drawing and played with the hamster. If children in the control group made an association with the clip by choosing with the sitting room this may have been because they interpreted the TV clip to have shown a visitor in a sitting room. This suggestion could be checked by a further condition in which control children saw a television clip that did not include any view or reference to rooms in a house. If the content of the programme had biased the children in our control groups, then we would expect the control children's choice of rooms in this condition to be at chance levels.

In contrast with the findings from other non-verbal researchers (Donohue et al., 1980; Macklin, 1985; 1987; Bijmolt et al., 1998), Ballard-Campbell (1983) did not find that children had any understanding of intent of advertisements with only 8-year-olds performing at better than chance. Unlike previous studies, Ballard-Campbell used a toy rather than a food product. However, when we included a toy advertisement in Experiment 5, the 6-year-olds performed at better than chance levels. We do not know why children in Experiment 5 performed better than children in Ballard-Campbell because the only difference we are aware of was that we used model rooms instead of pictures. If using a model room made children perform better than chance, we would have expected children in Experiment 1-4 to have shown similar improved performance as in Experiment 5. The findings from Experiment 5 could be followed up with further studies using other non-food products, in addition to toys. As foods can appropriately be found in many places (including dining rooms, kitchens, and other rooms), children may

find it harder to associate a food advertisement with a shop when the alternative choices are models like kitchen and dining room. However, toys may be less likely to be associated with a dining room or a kitchen and therefore children were more likely to choose the shop model than these other rooms when the advertisement was one for a toy. Nonetheless we stress that the children's 'success' in choosing the shop model in Experiment 5 applied only to a small group of 6-year-olds, and this finding would need replicating before we could say with any certainty that children are more likely to associate toy advertisements with shopping than they are to associate food advertisements with shopping. Even if it turned that 6-year-olds were better at recognizing toy advertisements, this age would still be later than the earlier ages for recognition that have been claimed by previous researchers (Donohue et al., 1980; Macklin, 1985; 1987).

In chapter 8-10, we asked children to report on how many times they logged onto the Internet per week. We did not find that children who used the Internet more often per week were better in recognizing advertisements on the Web pages than children who used the Internet less often. This result may have been caused by the way we asked children to report on their amount of exposure. Children were only asked to state the number of occasions that they logged onto Internet, not how long they actually spent on the Internet. Although future studies could construct a more detailed questionnaire we caution that this might be difficult to do with young children who may have problems estimating time periods. An alternative would be to ask the children's parents about the length of time their children spent on Web sites, but unless parents were continually monitoring their children's viewing this might also only be an approximation of the actual time.

In chapter 8-10, we asked children to draw an advertisement in blank sheet of paper to represent where children would like to put advertisements on a Web page. We found difficulties in interpreting their drawings because we did not know if children located the advertisement in a particular space (e.g. in middle or in the top) because that is where they wanted to put an advertisement or because it is where they had seen advertisements earlier during the task. In future we would

ask children to draw where they would like to put advertisement first - before doing the recognizing task.

Price was the only cue that we used in the Experiment 7-8 and we found that price, as a cue, was only of benefit to older children (10 and 12 years) in recognizing advertisements on the Web pages. We do not yet know what other cues could help children in general to identify advertisement on the Web. Price was used in the current studies, at least in part, because it is the only cue that could easily be included in the printed Web pages. If Web pages were presented on a screen, other cues (i.e. animation, flashing or colour) might also aid children's ability to distinguish between advertisements and the content of the Web pages. This is an issue for further research.

11.3 Implication of Experiments

In Experiments 1-5, younger children did not have the ability to understand the persuasive intent of advertisements, in Western and non-western countries. Our finding has implications for regulation and educating children about advertising. In 2007 OFCOM banned unhealthy food and drink advertisements aimed at children in UK during peak and off-peak hours in children channels. Nonetheless this ban applied only in children's programmes not in adults' programmes. Often children watched other programmes (i.e. soap opera and music channels) with or without their parents' supervision and thus they are still being exposed to advertisements. In addition, there are others advertisement (i.e. toys advertisements) that are still aired during children programmes and OFCOM should consider limiting these or banning all advertisements aimed to children. Currently, OFCOM regulations only apply in television and not in other media (i.e. Internet and magazine). In experiment 6-8, our findings show that children have difficulties recognizing advertisements from the surrounding content on Web pages. As Internet becomes one of most frequent activities among children, governments should also consider the regulation of advertisements on the Internet. However, we acknowledge that it will be a difficult task to ban or to limit advertisement on the Web pages because children are connecting to Web pages around the world and every country would need to agree a common policy.

Alternatively educating parents and teachers about the nature of advertising (i.e., effect of advertisements on children and how to protect the children from the advertisements) could be effective. The messages on media literacy that the parents and teachers receive could be delivered to the children and directly aimed at making children more aware about advertisements. For example, on the Internet, when children are browsing on Web pages, parents and teachers could teach the children how to identify advertisements on the Web pages.

Advertisements regulation in Indonesia was developed only for, and around, adults. Hence compared to Western countries (i.e., UK) Indonesian children are exposed to all kind of advertisements because of lack of regulation. Even now, the Indonesian government does not consider controlling advertising aimed at children as an important issue. However, parents in our questionnaire study stated their concern about the advertisements aired on television during children's or during regular programmes, and about the lack of advertisement regulation in Indonesia. Parents wanted advertisements aimed at children to be limited or banned. We found Indonesian children performed poorly in non-verbal tasks and even older children in Indonesia had difficulties verbally explaining the intent of advertisements (i.e., to sell or to inform). When children were asked to point to advertisements on the Web pages, only three-quarters of 12-year-olds could recognize the advertisement on the Internet while the younger ages experienced considerable difficulties. We conclude that Indonesia children are vulnerable to advertisement because they had difficulties in recognizing and understanding the purpose of advertisements, and thus the government should take action to protect children by reconsidering the current advertising regulations in Indonesia.

11.4 Future research

The main focus of any future research will need to be in the context of new media developments. As we have pointed out several times in this thesis nearly all the existing research into children and advertising has been based on children's understanding of television advertising. But traditional 'spot' advertising on

television is unlikely to remain the same, and it is likely that marketers will put a lot more resources into advertising to children through new media. As far as we know, the studies of children's recognition of Web page advertisements in this thesis (Experiments 6-8) are the first experimental studies of the children's understanding of advertisements on the Internet. Our experiments focused only on one aspect of Internet advertising (how well children recognized an advertisement in the context of a Web page). Being the first studies our experiments were limited and they could be extended to address many other questions about children's understanding. We used print outs of Web pages, but future researchers might consider presenting Web pages interactively, and using some of the techniques that Internet advertisers use to get children's attention, e.g. advergames as in Moore (2006). Just as research into television advertising has moved from looking mainly at children's awareness of advertisements to looking at the effects of those advertisements, e.g. on children's food preferences and eating behaviour as in Halford et al. (2003), so any research into Internet advertising needs to look at not only how children interpret Web page advertisements, but also the effects of Web advertisements on children's behaviour. More generally, any Internet based research will need to be extended into all aspects of new media advertising, because the past research into television advertising may not always be relevant to understanding the effects of new media advertising on children in the future.

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APPENDICES

Appendix 1. Chapter 1.Methods and measurements

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Atkin (1975)	Effect adv (food)	8, 9, 10 yr	Factor analysis, descriptive						√	
Atkin (1978)	Effect adv (food, request)	3-12yrs	Descriptive, Cross tabulation, Chi Square							Observation
Atkin & Gibs (1978)	Effect adv (food/cereal)	4-7 yrs	Descriptive				√			Observation
Borzekowski & Robinson (2001)	Effect adv (food)	2- 6 yrs	T-test, Chi Square, Cochran Q		√		√			
Goldberg (1990)	Effect adv (food)	9-12yrs	T-test, ANOVA				√		√	
Gorn & Goldberg	Effect adv (food)	5-8 yrs	Descriptive, ANOVA							Observation

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
(1982)										
Halford et al (2004)	Effect adv (Food)	9-11yrs	Kruskal Wallis, ANOVA	√						Consumption choices
Halford et al (2007)	Effect adv (Food)	5 – 7 yrs	ANOVA, MANOVA, T-test	√						Consumption choices
Hitching el al (1998)	Effect adv (Food: recalled and consumption)	9-11yrs	Spearman				√			
Lewis & Hill (1998)	Effect Adv (Food) & Content analysis (Food)	9 yrs	ANOVA						√	
Morton (1990)	Effect adv (Food)	13 yrs	ANOVA, Descriptive						√	
Woodward et al (1997)	Effect adv (Food)	12-15yrs	Descriptive, ANOVA, regression						√	
Atkin & Block (1981)	Effect adv (Alcohol)	18-22yrs	Regression						√	
Atkin et al (1984)	Effect adv (Alcohol)	12-17yrs	Regression						√	

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Austin et al (2006)	Effect adv (Alcohol)	9-17 yrs	Logistic regression				√			
Collin et al (2005)	Effect adv (Alcohol)	11-12yrs	Sequential Regression, Log regression, Multivariate analysis, Bivariate association						√	
Collin et al (2007)	Effect adv (Alcohol)	9-13yrs	Descriptive, T-test						√	
Dube et al (2006)	Effect adv (Alcohol)	≥ 19 yrs	Logistic regression						√	
Ellickson et al (2005)	Effect adv (Alcohol)	12-14yrs	Regression						√	
Grube & Wallack (1994)	Effect adv (Alcohol)	10-11yrs	Non recursive structural equations analysis				√		√	
McClure et al (2006)	Effect adv (Alcohol)	11-14yrs	Regression					√		

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Arnett (2001)	Effect adv (Cigarette)	12-17yrs	T-test, Chi Square, Linear regression						√	
Arnett & Terharian (1998)	Effect adv (Cigarettes)	11-18yrs	Regression, logistic regression						√	
Difranza & Tye (1990)	Effect adv (Cigarette)	≤ 18 yrs	Descriptive, Regression						√	
Goddard (1992)	Effect adv (Cigarette)	12-14yrs	Regression						√	
Meir (1991)	Effect adv (Cigarette)	11-13yrs 14-17yrs	3-way ANOVA, Newman-Keuls						√	
Pollay (1995)	Effect adv (Cigarette)	12-18yrs	Elastic analysis					√	√	
Wakefield et al (2006)	Effect adv (Cigarette)	14 yrs	Chi square, log regression						√	Discussion
Brody et al (1974)	Effect adv (Request)	Parents & 3-5 yrs	T-test, Priori							Observation

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Buijzen & Valkenburg (2000)	Effect adv (Request)	7–12 yrs	Multiple regression analysis							Writing a list
Buijzen & Valkenburg (2003)	Effect of adv (Request, pester power)	8-12yrs with their parents	Chi Square, Cronbach, Regression						√	
Chan (2003)	Effect of adv (Request/materialism)	6-13yrs	Multi regression, Cronbach Alpha, Duncan pair-wise, F-test						√	
CNAD (2004)	Effect adv (Request & pester)	Parents	Descriptive						√	
Greenberg et al (1986)	Effect adv (Request, pester power)	4-13 yrs	Descriptive, ANOVA						√	
Lyle & Hoffman (1972)	Effect adv (Request)	Parents	ANOVA, log regression						√	
Galst & White (1976)	Effect adv (Request, pester	3–11 yrs	Wilcoxon and		√					Observation

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
	power)		Spearmann							
Goldberg & Gorn (1978)	Effect adv (Request, materialism, parent-child conflict)	4 - 5yrs	Chi Square, percentages, ANOVA				√			
Nairn et al (2007)	Effect adv (Request, materialism)	9-13yrs	Descriptive, T-test, Post hoc						√	
Pine & Nash (2002)	Effect adv (Request)	4 – 6 yrs	Pearson, ANOVA, Mann Whitney, Chi Square, Shapiro Wilks				√			Write letter to Santa Claus
Pine et al (2007)	Effect adv (Request)	6 - 8 yrs	ANOVA, Chi Square, Pearson						√	listing
Robertson & Rossiter (1974)	Effect adv (Request)	6, 8, 10yrs	T-test, ANOVA						√	
Robertson et al	Effect adv (Request, conflict)	Mothers of 3-4, 5-7, 8-10	Factor analysis,							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
(1989)		yrs	Scheffe test, ANCOVA						√	Dialog
Ward &Wackman (1972)	Effect adv (Request, pester power)	Parent	MANOVA						√	
Andersen et al (2008)	Children's attitude toward advertising	10-13yrs	Chi Square, ANOVA, Descriptive						√	
Auty & Lewis (2004)	Product placement	11-12yrs	Pearson Correlation		√		√			
Kopelman et al (2007)	Brand recognition	9-11 yrs	Chi square, Mann Whitney, Kruskal Walis						√	Quiz
Robinson et al (2007)	Brand preferences	3-5 years	ANCOVA	√						
Valkenburg & Buijzen (2005)	Brand awareness	2-8 yrs	MANOVA				√			
Leiser et al (1991)	Economic understanding	8, 11, 14 yrs	MDS, Descriptive						√	
Leiser &	Economic	6, 8, 10 and	ANOVA							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Halachmi (2006)	understanding	12yrs					√			
Thompson & Siegler (2000)	Economic understanding	5, 7, 9 yrs	Descriptive, ANOVA, Tukey test	√						
Berti & Bombi (1981)	Understanding money	3-8 yrs	Mann Whitney U	√						
Bonn et al (2000)	Understanding money	7, 9, 11, 14 yrs	ANOVA, Chi Square				√			
Damay (2008)	Understanding price	5-13yrs	Descriptive						√	
Furnham (1999)	Pocket money	20-86yrs	ANOVA, regression, Varimax						√	
Furnham (2001)	Pocket money	≥10- ≤19 yrs	Descriptive, VARIMAX						√	
Butter el al (1981)	Adv recognition	4, 5 yrs	MANOVA, T-test, Cochran a	√						
Levin et al (1982)	Adv recognition	3, 4, 5yrs	ANOVA, Newman Keuls	√						

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Kunkel (1988)	Adv recognition	4-5 yrs & 7-8 yrs	Log linear, Chi Square, ANOVA		√					
Palmer & McDowell (1979)	Adv recognition (Separators)	5 – 6 yrs	ANOVA				√			
Stutts et al (1981)	Adv recognition (Separator)	3, 5, 7yrs	ANOVA, T-test		√					
Zuckerman (1978)	Adv recognition	7, 8, 9yrs	ANOVA, Z-score, d-prime		√					Observation on attention
Ballard-Campbell (1983)	Understanding intend	4, 6, 8yrs	Newman-Keuls, 1-way ANOVA, Chi square		√					
Blades (2007)	Understanding intend	8-9 yrs	Descriptive	√	√					
Blatt et al (1972)	Understanding Intend	5, 7, 9, 11 yrs	Descriptive	√						
Chan & McNeal (2006)	Understanding intend, & parent agents	6-14yrs & parent	Descriptive, R^2, logistic regression						√	

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Christenson (1982)	Understanding Intend	6, 7, 10, 11 yrs	Cronbach Alpha, ANOVA, Tau						√	
Donohue et al (1980)	Understanding intend	3 - 6yrs	Descriptive, Chi Square		√					
Macklin (1983)	Understanding Intend	4 – 6 yrs	ANOVA, Descriptive, Binominal Probability	√	√					
Macklin (1985)	Understanding Intent	3, 4, 5yrs	Descriptive, T-test, Chi Square		√					
Macklin (1987)	Understanding intend	3 – 5 yrs	Pearson, Fisher test		√					Play activity
Meyer (1978)	Understanding intend	6-11yrs	Descriptive, Chi Square	√						
Oates et al (2003)	Understanding Intend	6, 8, 10 yrs	Qualitative			√				
Owen et al (2007)	Understanding intend	7-8 yrs, 10-11yrs	Chi Square, Descriptive	√	√					
Ward (1972)	Understanding intend	5-12 yrs	ANOVA				√			

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Ward et al (1977)	Understanding Intend	Parents & 5,8,11yrs	Descriptive, Chi Square				√		√	
Ward & Wackman (1973)	Understanding Intend	5, 8, 11yrs	ANOVA, descriptive, regression				√			
Bartholomew & Donohue (2003)	Awareness adv	10-12yrs	Qualitative			√	√			
Bijmolt et al (1998)	Awareness adv	5-8 yrs	Murals analysis, CHAID	√	√					
Chan (2000)	Awareness adv	5-12yrs	Descriptive, Chi square				√			
Oates et al (2002)	Awareness adv	6,8,10yrs	Percentages	√	√					
Rubin (1974)	Awareness adv	6,8,11yrs	Descriptive, Chi Square	√						
Wartella & Ettema (1974)	Awareness adv	3-4yrs, 5-6yrs, 7-8yrs	One way ANOVA	√						Observation on attention
Clark & Delia (1976)	Persuasion techniques	7–14 yrs	3-way-ANOVA	√						
Enftmier &	Persuasion techniques	9 yrs	Inductive							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Dyson (1986)			analysis	√	√					
Weis et al (1991)	Persuasion techniques	3 - 6 yrs	ANOVA, factor analysis	√						
Chan & McNeal (2003)	Parent's attitudes	Parent	F-stat, Pearson correlation						√	
Rose et al (1998)	Parent's attitude		ANOVA, MANOVA, Tukey HSD						√	
Young et al (2003)	Parent's attitude	20-70yrs	Chi Square, Yates correlation, Factor Analysis						√	
Rideout et al (2003)	Media	Parent's of 0-6yrs	Descriptive						√	
Roberts et al (1999)	Media	2-18 yrs, Parent's of 2-7 yrs	Descriptive				√ (for parents)		√	
Barcus (1971, 1977, 1980)	Content analysis (Television)		Descriptive statistic							
Bryd-	Content analysis		Descriptive							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Bredbenner (2002)	(Television)		statistic							
Furnham et al (1997)	Content analysis (Television)		Descriptive, Chi Square							
Kunkel & Gant (1992)	Content analysis (Television)		ANOVA, Chi square							
Fielder et al (2008)	Content analysis (Internet)		Descriptive							
Moore (2006)	Content analysis (Internet)		Descriptive							
Gantz et al (2001)	Content analysis (Food)		Descriptive							
Gallo (2001)	Content analysis (Food)		Descriptive							
Reece et al (1999)	Content analysis (Food)		Descriptive							
Robert & Pettigrew (2007)	Content analysis (Food)		Descriptive							
CAMY (2002)	Content analysis on magazine (Alcohol)		Descriptive							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
CAMY (2003)	Content analysis on radio (Alcohol)		Descriptive							Case study
Garfield et al (2003)	Content analysis (Alcohol)		Descriptive							
CDC (2004)	Health (Obesity)	6-19yrs							√	
Descrochers et al (2007)	Health (Content analysis-obesity)		Descriptive							
Royal College Physician (2004)	Health	2-4 yrs, 6-15 yrs	Descriptive							IBM examination
Weber et al (2006)	Content analysis - Internet (Food)		Descriptive							
Li & Bukovac	Internet user	Undergraduate	ANOVA				√			Observation
Livingstone & Bober (2004)	Internet user	9-19 yrs	Percentages						√	
Livingstone &	Internet user	9-19 yrs	Percentages							

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
Bober (2005)									√	
OFCOM (2006, 2007)	Internet user	8-15yrs	Descriptive						√	
Pew Internet and American Project (2004)	Internet user	Undergraduate	Descriptive						√	
Chan & Fang (2007)	Internet usage	15-24yrs	Post hoc, Descroptive						√	
Rodgers et al (2007)	Internet usage	18-43 yrs	Regression						√	
Nairn et al (2007)	Internet (Ethic)	9-11yrs	Descriptive						√	
DFCS (2006)	Bullying	12-15yrs	Descriptive						√	
MSN/YouGov (2006)	Cyberbullying	12-15yrs	Descriptive						√	
Hernandez (2008)	Advergame	10-12yrs	Cronbach Alpha, Regression						√	Played advergame
Mallinckrodt	Advergame	5-8 yrs	Chi Square,		√					

Study	Type	Age	Statistical Designs	Methods						
				Verbal	Non Verbal	Focus group	1-1 Interview	Tel. Interview	Survey	Others
& Mizerski (2007)			T-test, ANOVA							
Henke (1999)	Understanding Intend (Internet)	9-11 yrs	Descriptive						√	
Deloache (1986)	Model study	18-30mth	ANOVA, Descriptive		√					
Deloache & Burn (1994)	Pictorial Information	24-30mth	ANOVA, Descriptive		√					
Nunes & Bryant (1996)	Understanding Number	5/6 yrs	Percentages		√					
Sharon & Wolley (2004)	Fantasy vs. reality	3-5 yrs	Spearmann, ANOVA				√			
Waterman et al (2000)	Nonsensical Question	5-8 yrs	ANOVA, Tukey, Kramer	√						

Appendix 2. Chapter 2. Advertising Broadcasting Regulations in Indonesia 2002

Advertising Broadcasts:

1. Advertising broadcast shall consist of commercial advertising broadcasts and service advertising broadcasts.
2. Advertising broadcasts shall adhere to the principle, goal, function and direction of broadcasting as meant in Article 2, Article 3, Article 4 and Article 5

a. Article 2:

Broadcasting shall be done the basis of the state ideology Pancasila and the 1945 Constitution of the Republic of Indonesia by observing the principles of benefits, justice, equalization, legal certainly, security, plurality, partnership, ethics, self reliance, freedom and responsibility.

b. Article 3:

Broadcasting shall be done with the aim, of strengthening national integrity, nurturing the character and identify of the nation towards a religiously devout a nation, intellectualizing the nation and promoting the public welfare within the framework of creating a self-reliant, democratic, just and prosperous community, as well as encouraging the Indonesian broadcasting industry.

c. Article 4:

I. Broadcasting as a mass communication activity shall function as sound information, education and entertainment media and social control and cohesion

II. In performing the function as meant in paragraph (I) broadcasting shall also have economic and cultural function

d. Article 5:

Broadcasting shall be directed towards:

I. Upholding the implementation of the state ideology Pancasila and the 1945 Constitution of the Republic Indonesia

II. Safeguarding and promoting morality and religious values as well as national identity

III. Improving the quality of human resources

IV. Safeguarding and forging national cohesion and unity

V. Promoting law-abiding awareness and national discipline;

VI. Channelling public views and encouraging the active role of the public in implementing national development as well as in conserving the environment

VII. Preventing monopolistic ownership and supporting sound competition in the broadcasting filed

3. Commercial advertisement broadcasting shall be banned from
    a. Doing a promotion of anything linked to the teaching of a religion,or an ideology, or an individual and/or a group which offends and/or underestimates the dignity of other religions' ideology, individual and/or group
    b. Doing a promotion of alcoholic drink or the like, and addictive material or substance
    c. Doing a promotion of cigarettes that displays the shape of cigarettes
    d. Displaying matters that contradict public ethics or religious norms; and/or
    e. Exploiting a child age less than 18 (eighteen)
4. The content of advertising broadcasts send out through a broadcasting agency shall meet the requirements set by the KPI.
5. Commercial advertising broadcasts sent out through a broadcasting agency shall become the responsibility of the broadcasting agency.
6. Commercial advertising broadcasts sent out in children's programme shall adhere to broadcasting standards for children.

7. Any broadcasting agency shall provide time for public service advertising broadcasts.
8. Commercial advertising broadcast time for a private broadcasting agency shall be maximum 20% (twenty percent) of the total broadcast time, and for a public broadcasting agency a maximum 15% (fifteen percent).
9. Public service advertising broadcast time for a private broadcasting agency shall be a minimum of 10% (ten percent) of commercial advertising broadcast time, and for public broadcasting agency a minimum of 30% (thirty percent) of its advertising broadcast time.
10. Any broadcasting agency shall be banned from selling its broadcasting time to anybody for whatever purposes, except for advertising broadcasts.

Appendix 3. Chapter 2. Advertising Broadcasting in Regulation for Children in UK (Retrieved form Advertising Standard Authority)

SECTION 7: CHILDREN

Background:

(1) The ASA and BCAP are required to have special concern for the protection of children. The ASA and BCAP regard people of 15 and under as children.

(2) The rules in this Section can and should be applied flexibly, taking into account the vulnerabilities and capabilities of both the target age groups and other age groups which might see the advertising.

(3) Emulation, Fears and Misunderstandings is an ITC-commissioned independent review of research into the potential for television advertising to distress or harm children and into children's ability to understand the commercial objectives of advertising at different developmental stages.

7.1 MISLEADING ADVERTISING AND CHILDREN

7.1.1 Children's inexperience

Advertising must not take advantage of children's inexperience or their natural credulity and sense of loyalty

Notes:

(1) The rules in this Section should be read in conjunction with those in Section 5 (Misleading Advertising).

(2) Children often buy products whose advertising reflects their appeal to a wider audience (for example, snacks or computer games). For the purposes of this Code, the term 'product of interest to children' describes this wider category of products or services. 'Children's product' means a product of more or less exclusive interest to children.

7.1.2 Unrealistic expectations

Advertisements for products of interest to children must take account of the level of experience of those in the relevant age groups so as to avoid arousing unrealistic expectations

Notes:

(1) This rule is not relevant if the advertising is only broadcast when those children are unlikely to be watching. (For example, a commercial for a video game broadcast during a late-night film.)

(2) Children's ability to distinguish between straightforward product demonstrations and imaginative scenes varies with age and the two elements should normally be clearly distinguishable to the relevant age groups. ('Imaginative scenes' include, for example, fantasy sequences and shots of the real-life counterparts of toys such as dolls or model trains.)

(3) Children under four typically have little ability to distinguish between imaginative scenes and reality. Those over about 12 generally have adult skills in this area.

(4) Verbal or visual ambiguity which could mislead children must be avoided. Slogans and comments which adults will recognise as exaggeration or irony may be taken more literally by children. Care is therefore needed.

(5) Backgrounds, sets and special effects must not give the impression that a product includes more, or does more, than is the case.

(6) Quick cuts, unusual camera angles etc may confuse very young children.

(7) Where accessories to a children's product cost a significant amount, there should normally be no suggestion that they are essential for the enjoyment of the basic product.

(8) The chances of winning a prize, and the value of it, must not be exaggerated, bearing in mind the age and sophistication of the relevant age groups. Licensees should examine the rules of competitions etc to ensure they are reflected fairly in advertising.

7.1.3 Product characteristics

If advertisements for products of interest to children show or refer to characteristics which might influence a child's choice, those characteristics must be easy for children of the appropriate age to judge

Notes:

(1) This rule is not relevant if the advertising is only broadcast when such children are unlikely to be watching.

(2) If a child might reasonably expect particular parts or accessories to be included with a product but they are supplied separately, this must be made clear. If essential parts (such as batteries) are not included, this should also be explained.

(3) Demonstrations of toys etc should normally reflect accurately what a child would experience when using them. In particular, if a toy is shown moving, it should be clear whether it can move independently or must be hand operated. Where construction or kit toys are being demonstrated, it is acceptable to show the toys apparently assembling themselves without human help. However, if there is ambiguity about what the product can really do, it may also be necessary to show how the product is really put together.

(4) Where the size of toys etc may be a relevant factor, the actual size must be made easy to judge. This is often done by comparison with a familiar object of unambiguous size. The comparison must not be distorted by, for example, perspective.

(5) The speed of toy cars etc must not be exaggerated by, for example, the use of close-ups.

(6) The rule also applies to free promotional items and premium items. Where proofs of purchase are necessary, advertising should normally explain the number and type required.

7.1.4 Expensive toys

Except in the case of television services carrying advertising directed exclusively at non-UK audiences, advertisements for expensive toys, games and comparable children's products must include an indication of their pric.e

Notes:

(1) For this purpose, a product will not be regarded as 'expensive' if it, plus any essential accessories, are reasonably widely available at a retail price below a figure specified by ASA and BCAP. (At September 2002, this was £25 but is subject to change.)

(2) Where a range of products is featured in an advertisement, only the most expensive item need be priced.

(3) Where it is impossible to show a precise cost, because retail prices are likely to vary, an approximation is acceptable so long as it is presented as simply indicative. For example, 'Around £x' or 'Costs between £y and £z'.

7.1.5 Prices

Where advertising for a children's product contains a price, the cost must not be minimised by the use of words such as 'only' or 'just'

7.2 FOOD AND SOFT DRINK ADVERTISING AND CHILDREN

On 1 July 2007, a new and important regulation governing nutrition and health claims for foods came into force. The regulation is complex and mandatory. BCAP encourages broadcasters to take advice on the effect of the regulation and to consult the Food Standards Agency's Guidance to Compliance with Regulation (EC) 1924/2006 on Nutrition and Health Claims on Foods, which is available at http://www.food.gov.uk

Notes:

1. The rules in 7.2 must be read in conjunction with the other rules in this Code, especially section 8.3, 'Food and Dietary Supplements'. For rules on the scheduling of HFSS product advertisements, please see the BCAP Rules on the Scheduling of Television Advertisements. References to food apply also, where relevant, to beverages.
2. The spirit, as well as the letter, of the rules in this section applies to all advertisements that promote, directly or indirectly, a food or soft drink product.

3. These definitions apply in rule 7.2:

- Children - refers to persons below the age of 16.
- Advertisements targeted directly at pre-school or primary school children – advertisements that directly target pre-school or primary school children through their content as opposed to their scheduling. For rules on the scheduling of HFSS product advertisements, please see the BCAP Rules on the Scheduling of Television Advertisements.
- Licensed Characters - those characters that are borrowed equities and have no historical association with the product.
- Equity Brand Characters - those characters that have been created by the advertiser and have no separate identity outside their associated product or brand.
- HFSS products - those food or drink products that are assessed as high in fat, salt or sugar in accordance with the nutrient profiling scheme published by the Food Standards Agency (FSA) on 6 December 2005. Information on the FSA's nutrient profiling scheme is available on the FSA website at: http://www.food.gov.uk/healthiereating/advertisingtochildren/nutlab/nutprofmod

7.2.1 Diet and lifestyle

Advertisements must avoid anything likely to encourage poor nutritional habits or an unhealthy lifestyle in children.

Notes:

(1) This rule does not preclude responsible advertising for any products including those that should be eaten only in moderation.

(2) In particular, advertisements should not encourage excessive consumption of any food or drink, frequent eating between meals or eating immediately before going to bed.

(3) It is important to avoid encouraging or condoning attitudes associated with poor diets, for example, a dislike of green vegetables.

(4) Portion sizes or quantities of food shown should be responsible and relevant to the scene depicted, especially if children are involved. No advertisement should suggest that a portion intended for more than one person is to be consumed by a single individual or an adult's portion, by a small child.

(5) Advertisements for food should not suggest that an inactive or sedentary lifestyle is preferable to physical activity.

7.2.2 Pressure to purchase

Note: Please see also 7.3 (Pressure to purchase)

(a) Although children may be expected to exercise some preference over the food they eat or drink, advertisements must be prepared with a due sense of responsibility and should not directly advise or ask children to buy or to ask their parents or other adults to make enquiries or purchases

Notes:

(1) This extends to behaviour shown: for example, a child should not be shown asking for a product or putting it into the parent's trolley in the supermarket.

(2) Phrases such as "Ask Mummy to buy you" are not acceptable.

(b) Nothing in an advertisement may seem to encourage children to pester or make a nuisance of themselves.

(c) Advertisements must not imply that children will be inferior to others, disloyal or will have let someone down, if they or their family do not buy, consume or use a product or service.

(d) Advertisements must neither try to sell to children by appealing to emotions such as pity, fear, loyalty or self-confidence nor suggest that having the advertised product somehow confers superiority, for example making a child more confident, clever, popular, or successful.

(e) Advertisements addressed to children should avoid 'high pressure' and 'hard sell' techniques, i.e. urging children to buy or persuade others to buy. Neither

the words used nor the tone of the advertisement should suggest that young viewers are being bullied, cajoled or otherwise put under pressure to acquire the advertised item.

(f) If an advertisement for a children's product contains a price, the price must not be minimised by the use of words such as "only" or "just". Note: Products and prices should not be presented in a way that suggests children or their families can easily afford them.

7.2.3 Promotional offers

Promotional offers should be used with a due sense of responsibility. They may not be used in HFSS product advertisements targeted directly at preschool or primary school children.

(a) Advertisements featuring promotional offers linked to food products of interest to children must avoid creating a sense of urgency or encouraging the purchase of excessive quantities for irresponsible consumption.

(b) Advertisements should not seem to encourage children to eat or drink a product only to take advantage of a promotional offer: the product should be offered on its merits, with the offer as an added incentive. Advertisements featuring a promotional offer should ensure a significant presence for the product.

(c) Advertisements for collection-based promotions must not seem to urge children or their parents to buy excessive quantities of food. They should not directly encourage children only to collect promotional items or emphasise the number of items to be collected. If promotional offers can also be bought, that should be made clear. Closing dates for collection-based promotions should enable the whole set to be collected without having to buy excessive or irresponsible quantities of the product in a short time. There should be no suggestion of "Hurry and buy".

(d) If they feature large pack sizes or promotional offers, e.g. "3 for the price of 2", advertisements should not encourage children to eat more than they otherwise would.

(e) The notion of excessive or irresponsible consumption relates to the frequency of consumption as well as the amount consumed.

7.2.4 Use of characters and celebrities

Licensed characters and celebrities popular with children must be used with a due sense of responsibility. They may not be used in HFSS product advertisements targeted directly at pre-school or primary school children.

Notes:

(1) Advertisements must not, for example, suggest that consuming the advertised product will enable children to resemble an admired figure or role model or that by not doing so children will fail in loyalty or let someone down.

(2) This prohibition does not apply to advertiser-created equity brand characters (puppets, persons or characters), which may be used by advertisers to sell the products they were designed to sell.

(3) Persons such as professional actors or announcers who are not identified with characters in programmes appealing to children may be used as presenters.

(4) Celebrities and characters well-known to children may present factual and relevant generic statements about nutrition, safety, education, etc.

7.3 PRESSURE TO PURCHASE

7.3.1 Direct exhortation

Advertisements must not directly advise or ask children to buy or to ask their parents or others to make enquiries or purchases for them.

7.3.2 Unfair pressure

Advertisements must not imply that children will be inferior to others, disloyal or will have let someone down, if they or their family do not use a particular product or service

7.3.3 Children as presenters

Children in advertisements must not comment on product or service characteristics in which children their age would not usually be interested

7.3.4 Direct response

Advertisements which offer to sell products or services by mail, telephone, email, Internet or other interactive electronic media must not be aimed at children

7.4 HARM AND DISTRESS

7.4.1 Mental harm

Advertisements must not contain material which could lead to social, moral or psychological harm to children

Note:
Negative or anti-social attitudes reflected in commercials may endorse similar attitudes amongst children. For example, advertisements should not:

(a) present criminal activities in a way which is likely to condone comparable behaviour in real life. (Scenarios which are clearly comedy or drama do not generally cause problems.)
(b) disparage education, high personal standards or caring qualities
(c) appear to condone boorish, greedy or anti-social behaviour
(d) present aggression as admirable or suggest it is an acceptable means of resolving problems or getting one's own way in real life.

7.4.2 Physical harm

Advertisements must not contain material which could lead to physical harm to children

Notes:

This guidance indicates particular areas of risk but is not exhaustive.

(1) Harmful emulation: Children sometimes copy dangerous or anti-social behaviour shown in advertisements. Experience and research have indicated that the following can be contributory factors:

a) the behaviour is easy to copy (i.e. without special preparations)

b) the scenario seems realistic rather than fantasy; live action rather than cartoon

c) the behaviour and the hero are 'cool'

d) the product or advertising appeals to the relevant age groups.

Even if no children appear in an advertisement, it may be possible for examples set by adults to encourage or condone dangerous or anti-social behaviour by children. Experience has also shown that even advertisements with no obvious youth appeal can trigger emulation if the action itself is particularly intriguing. Care should be taken that dangerous behaviour will not be seen as a challenge or dare.

Licensees should balance the risk of the behaviour (or similar actions) actually being copied by children against how serious the consequences could be if there was emulation. Clearly, the less serious the potential consequences, the more leeway is available. For further information see Copycat Kids? An ITC commissioned report on research into emulation risks.

(2) Safety: Advertisements must not encourage or condone potentially dangerous behaviour and should not discourage children from following established safety guidelines. The advice of relevant safety organisations should be sought where there is doubt.

Particular care should be taken with:

a) road safety for children as pedestrians, cyclists or passengers

b) domestic situations (where most accidents happen)

c) medicines and chemicals, or items which could be mistaken for them

d) dangerous machinery, fire, matches etc. (Because children may be particularly attracted to what other children are seen doing in commercials, they should not normally be shown using products which are not intended for them and which can be dangerous.)

e) playing in or near water, or digging 'caves' in sand dunes etc. (Children have died when caves have collapsed.)

(3) Clubs: Licensees should normally obtain satisfactory evidence that children's clubs promoted in advertising are responsibly supervised.

7.4.3 Bullying

Advertisements must not encourage or condone bullying

Notes:

(1) Except in appropriate charity or public service advertising, advertisements should not normally show scenes of bullying, taunting or teasing, or of children being ostracised or criticised behind their backs.

(2) Care is needed with stereotypes of children to avoid the risk of bullying. Children who are 'different' physically or in behaviour, ability or background must not be presented as unpopular or unsuccessful. Nor should they normally be presented as non-users of a product or service or unworthy of it. However, even if an advertisement portrays only adults being stereotyped, an ill-judged stereotype could still be harmful to children (for example, by encouraging bullying).

7.4.4 Vulnerability

Advertisements must neither encourage children to go off alone or with strangers nor show them doing so

7.4.5 Sexuality

Advertisements must not portray children in a sexually provocative manner

Note:

Scenes in which children are not fully clothed require careful consideration.

7.4.6 Distress

Advertisements likely to cause distress to children must not be shown in children's programmes, or in programmes likely to be seen by significant numbers of younger children

Notes:

(1) Distress may be caused, particularly to younger children, by frightening material, extreme appeals to the emotions etc. However, there can be cases where a very few children, because of their individual circumstances or experiences, may be upset by material which would not affect the vast majority of children. In those cases, the ASA and BCAP would not be justified in taking action. Experience has shown that children up to four years can be upset if their feelings of security are undermined by, for example, the use of 'morphing' (computer effects) to distort real human faces grotesquely. Young children often sit close to the screen and this can magnify the impact of disturbing material. Some children up to about ten years old may also be distressed by, for example, aggression or inter-personal violence which seems 'real'.

(2) Advertisements likely to distress children will require timing restrictions whether or not the campaign is intended for a young audience. (See 7.3.7)

7.4.7 Use of scheduling restrictions

Appropriate timing restrictions must be applied to advertisements which might harm or distress children of particular ages or which are otherwise unsuitable for them

Notes:

(1) Please also see the BCAP Rules on the Scheduling of Advertising.

(2) The following advice reflects decisions and guidance derived from past cases including those previously published in Ofcom Advertising Complaints Reports.

The ASA and BCAP distinguish between two kinds of advertising problem in this area:

- Inappropriate advertising – advertising which is regarded as relatively harmless but would be considered inappropriate by many parents in either children's programmes or family viewing time
- Harmful advertising – advertising (rarely encountered), which could be a direct harmful influence on children or teenagers, or could be seriously distressing to younger children.

Inappropriate advertising

The ASA and BCAP believe that parents should feel confident that they can allow even the youngest children to watch, unaccompanied, programmes made specifically for children. Excluding advertising from breaks in or around these programmes, or from children's channels, is often called an 'Ex Kids' restriction. It is a suitable restriction for advertising which is inappropriate for children up to about eight years old (as long as it is not likely to be harmful or distressing to them). Even mildly sexual or aggressive content must be excluded.

If advertising is inappropriate for children over eight, Ex Kids may not be sufficient. The following may be useful in considering which timing restrictions are appropriate:

- Inappropriate for children under eight: Consider Ex Kids
- Inappropriate for children over eight: Consider further restriction

Harmful Advertising

When an advertisement has been tested against the rules in 7.4 and a judgement has been made that it could be a harmful influence or could cause distress to particular age groups, a more stringent restriction is required than for advertising

which is simply 'inappropriate'. A restriction which will minimise the chances of those in the relevant age groups seeing the advertising is needed. (Even conscientious parents cannot, in practice, control their children's viewing of advertising because, unlike programmes which are scheduled, advertisements appear unpredictably.)

Once the difficult judgement has been made that there is a significant risk of harm or distress, the choice of an appropriate restriction can be based on children's and teenagers' viewing patterns.

In these fairly uncommon cases, the following guidance may be helpful in minimising the chance of the identified age group seeing the advertising:

- Ex Kids restriction — Will avoid most children up to 4 years old
- Post 9pm restriction — Will avoid most 5-8 year olds
- Later restriction (eg post 11pm) — Will avoid most 9-12 year olds

Where a realistic risk of harm to those over 12 years old is perceived, consideration will need to be given to whether the advertising should be shown at all.

Making judgements

In judging the suitability of a timing restriction, the ASA and BCAP will take account of the seriousness of any potential consequences, the realistic likelihood of a problem arising, and the age of the children likely to be affected.

The ASA and BCAP acknowledge that it is not easy to predict the reactions of children of particular ages and recognise that cases must be judged on their individual merits.

Note: Specific Scheduling Restrictions

See the BCAP Rules on the Scheduling of Television Advertisements for mandatory scheduling restrictions which relate to young viewers and which apply to all advertising in the following categories:

(a) alcoholic drinks and liqueur chocolates

(b) condoms

(c) lotteries, pools or bingo

(d) matches

(e) medicines, vitamins or other dietary supplements and including:

1. advertising in any category in which children are shown having any of these products administered to them

2. advertising for products which cannot easily be distinguished from a medicine or where the advertising itself could cause such confusion

(f) merchandise based on children's programmes

(g) personalities or other characters (including puppets etc) who appear regularly in a current or recent children's programme on any UK television channel. Restrictions apply where such characters present or endorse products or services of particular interest to children. (The restrictions do not apply to public service advertisements or to characters specially created for advertisements)

(h) religion, faith or systems of belief

(i) sanitary protection etc

(j) slimming products, treatments or clinics

(k) 15- and 18-rated films and videos.

(l) HFSS food or soft drink products