

# **Understanding Children's Thinking about Alcohol Advertisements on Television: a Cognitive Developmental Approach**

**Avril Susan Nash**

A thesis submitted in partial fulfilment of the  
requirements of the University of Hertfordshire  
for the degree of Doctor of Philosophy

The programme of research was carried out in the  
Department of Psychology, Faculty of Health and Human Sciences,  
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## **Author's note**

Mentioned throughout this thesis are a number of brand named drink and food products. It should be noted that the following are recognised as registered trademarks: Archer's®; Bacardi Breezer®; Baxter's Soup®; Bell's Whisky®; Boddington's®; Budweiser®; Carlsberg®; Diet Coke®; Ferrero Rocher®; Guinness®; John Smith's®; Kaliber®; Lucozade®; McVities Munch Bites®; Nutrigrain®; Red Bull®; Smirnoff Black Ice®.

## Abstract

A theoretical understanding of the nature of knowledge and its development in children was applied to an under-researched area: children's thinking about television alcohol advertisements. Methodologies were developed which recognise that children have multiple ways of thinking about things, that learning is a dynamic process and that knowledge is not always available for verbal report.

Research took two complementary routes. Firstly, cross-sectional studies with children aged 7 to 10 tapped into children's implicit, pre-explicit and explicit knowledge, by means of a categorisation study, a story style paradigm and interviews. Children of all ages found television alcohol advertisements attractive and particular styles of advertising, e.g. humour, cartoon format or the inclusion of an animal, increased the popularity of an advertisement. Children's pre-explicit and explicit responses appeared to be biased by the development of alcohol knowledge. Secondly, a longitudinal study followed a group of over 100 children aged 9 for three years, collecting data every six months and investigating the potential influence of a number of factors on positive alcohol expectancies, a predictor of alcohol behaviour. New measures provided data on children's alcohol expectancies (Alcohol Beliefs and Expectancies in Childhood questionnaire), family and peer influences (The Children's Alcohol Inventory), self-esteem (IAM questionnaire), television viewing habits (TV Viewing Habits Questionnaire), and exposure to television alcohol advertisements (Television Advertising Awareness Questionnaire).

The findings suggest a possible long term influence of alcohol advertising around the age of 11 on later alcohol expectancies, but that this influence is less than that of peer behaviour and parental attitudes. It is also suggested that children as young as seven be included in future research, that the style of alcohol advertisements is monitored closely to minimise their appeal to children and, finally, that applied research should include methodologies which reflect the state and complexity of children's developing knowledge.

# Chapter 1

## Background, theories and literature review

*"That's what learning is. You suddenly understand something you understood all your life, but in a new way."*

(Doris Lessing, 1919-, British novelist)

The essence of the lifelong and cyclical nature of learning is captured in this quotation. Childhood is the start of a long journey of learning, absorbing knowledge from here, there and everywhere. Everyday life presents a multitude of learning opportunities. Everywhere children turn there is something else which offers a new perspective to their existing knowledge. The diversity of the sources, the information itself and the pre-existing knowledge into which it has to be integrated are broad and varied. Today that diversity of sources includes television and television offers children a window on a much wider world than children would have had at the beginning of the 20<sup>th</sup> century. Through television, children are now exposed to a wide range of both real life and fictional accounts, to people they will never meet, to views of wars in other countries and to animals in places they may never visit. The list is endless. Television presents children with vast learning opportunities. How children deal with these opportunities is an area of research that, like learning, is ongoing.

This thesis considers just one particular aspect of television as a potential source of influence on children: alcohol advertisements. The aim of the research programme is to investigate children's thinking about alcohol advertisements on television and, specifically, to take a theoretically driven approach to the study of children's representations of alcohol derived from television alcohol advertising. Previously, research into alcohol advertising has concentrated on the effects of such advertising

on adolescents and adults. Very little research has been undertaken with primary school aged children. Nevertheless children, too, are frequently exposed to alcohol advertising on television and yet little is known about whether and how such advertisements contribute to children's representations of alcohol. Moreover, an examination of the research to date reveals that most studies into television alcohol advertising and children have not been theoretically driven, nor has the issue of directional causality been addressed.

In the first section of this chapter the background to the study is considered together with some of the findings from an initial review of the literature. In the next section developmental and psychological theories are discussed which relate to understanding how children's thinking develops and how methodologies to investigate children's knowledge and opinions of alcohol advertising would benefit from being underpinned by theory. Next, research to date is reviewed in light of these theories. Finally, the last section sets out the aims of the programme of studies and gives an overview of the programme of work which addresses these aims.

## **Background**

Problems with young people drinking more alcohol now than in the past appear to be proliferating. Recent figures suggest that not only are adolescents drinking more, but there is an earlier onset of drinking and that the incidence of binge drinking (i.e. 5 or more drinks in one session) and drunkenness is increasing (Hibell & Andersson, 2003). A recent report from the Joseph Rowntree Foundation indicated that a quarter of 13-14 year olds and around 55% of 15-16 year olds had taken part in binge drinking (Beinart, Anderson, Lee, & Utting, 2002). Clearly, there are negative effects of this increased consumption in terms of health problems, behaviour and related behaviours (see, for example, Strasburger, 2001) and, naturally, these are of concern to parents, governments and society as a whole.

It would appear that attitudes towards alcohol and alcohol behaviour are changing amongst young people. In an attempt to discover why these changes are occurring, it is important to explore areas of influence which may have led to this situation. A

review of the literature for studies investigating alcohol behaviour in adolescence and early adulthood suggest that family, peers, self esteem and television may all play a contributory role to young people's representations and expectations of alcohol (Aas, Leigh, Anderssen, & Jakobsen, 1998; Almarsdottir & Bush, 1992; Marsden et al., 2005; e.g. Ouellette, Gerrard, Gibbons, & Reis Bergan, 1999; Robinson, Chen, & Killen, 1998). Whilst family life has no doubt changed in recent years, television is, perhaps, a factor that has also changed considerably. It is now possible to watch television for twenty-four hours a day and the advent of cable and satellite television has greatly increased the number of commercial channels available. Findings suggest that television can have a positive influence, with learning occurring at an early age as a result of watching educational programmes such as Sesame Street (Rice, Huston, Truglio, & Wright, 1990). If this is so, then it might equally be possible that there are incidental and negative effects on children of watching other types of television. For example, their beliefs and thinking about alcohol may be influenced by exposure to advertisements for alcohol. Is this supported by existing research?

### **Initial literature review**

Existing research on the potential influence of television alcohol advertising on children provides little information. A review of the literature via scientific databases, covering the last 13 years, indicates that there is a distinct lack of research in this area. The majority of studies exploring the effects of alcohol advertising have concentrated on adolescents and adults; only 12 studies appear to have included children of 12 years and below in the last 13 years. Of these, ten included children of 10 years and below, although in five of these studies, the youngest participants were 10 years old. Therefore only five studies appear to have researched television alcohol advertising and children below 10 years of age (Austin & Johnson, 1997a; Austin & Knaus, 2000; Austin & Nach Ferguson, 1995; Dunn & Yniguez, 1999; Waiters, Treno, & Grube, 2001). Moreover, the studies mentioned have all taken place outside the UK. As a result the findings may not be generalisable to the UK where styles of advertising, the use of humour in advertising and the legal age of consent for drinking differ (Caillat & Mueller, 1996). Research in the UK appears to



be even more scarce: for this, it was necessary to refer back as far as 1988 for a Glasgow based study, in which the youngest participants were 10 years old (Aitken, Leather, & Scott, 1988).

This lack of research is surprising in view of the fact that, whilst alcohol advertisements are not supposed to be targeted at children (BCAP, 2004; ITC, 2002), they are frequently screened at times when children may be watching television, e.g. after 6pm on weekdays and during sports programmes in the evening and at weekends, and they are advocacy by nature, in that they present only a positive view of alcohol. At the same time, the tendency for alcohol advertising studies to start with children aged 12 years and over suggests a belief by researchers that there is only a concurrent effect of advertising. Yet, as this introduction will suggest, current theories of children's cognitive development indicate that knowledge develops gradually, often from an implicit level, i.e. a level of knowledge without awareness (Karmiloff Smith, 1992). As incidental advertising exposure has been found to provide an ideal opportunity for implicit learning in adults, i.e. learning without conscious awareness (Perfect & Askew, 1994), it may be that exposure to alcohol advertising in childhood provides one way in which learning about alcohol begins.

Thus, the paucity of current studies clearly suggests a need for more research into children's thinking about alcohol advertisements on television and the potential long term influence of such advertising. This is particularly important for children under the age of 10 years, and for the UK.

### **Theoretical considerations**

What then is the most appropriate way to approach research into understanding children's thinking about alcohol advertising? As with all studies investigating children's thinking, it is crucial to utilise methodologies that present an accurate picture of children's knowledge and opinions. This is no different for studies which investigate the role of television alcohol advertisements as possible influences on children's thinking about alcohol, prior to adolescence and prior to the onset of

thinking. This calls for research to be underpinned by developmental theory and the following section reviews theoretical issues that are pertinent to understanding children's thinking. Thus, consideration is given to the necessity and the benefits of using methodologies which are theory driven in research with children.

### **Age stage theories and verbal report**

To date there has been a tendency in studies investigating children's responses to advertising to base interpretations on age-stage theories and to rely on verbal report (see, for example, Kunkel & Roberts, 1991; Paget, Kritt, & Bergemann, 1984; Stutts & Hunnicutt, 1987). Age-stage theories propose that cognitive development in children occurs in an across-the-board stage-like manner, according to age and irrespective of domain, resulting in qualitatively different representations at different stages. In advertising research this is frequently interpreted as identifying ages at which children can understand various aspects of advertising such as distinguishing between advertisements and programmes or understanding the persuasive element (e.g. Levin, Petros, & Petrella, 1982). At the same time information often relies on verbal report gathered through interviews and focus groups (Paget et al., 1984; Waiters et al., 2001). Frequently, however, the findings from such studies differ; for example, understanding advertising appears to happen at different ages in different studies. To understand why this might occur, a review of current developmental research, as set out in this section, suggests that a reliance on verbal report and interpretations based on age stage theories fail to consider the complexity of knowledge and individual's representations and thinking. It would seem that to rely on these methods and interpretations when researching children's responses to advertising is inappropriate.

Current developmental theories remove the emphasis on both verbal report and age-related stages and provide evidence that children are far more competent than age-stage theories originally suggested. Instead they consider the nature and development of domain specific knowledge, with Karmiloff-Smith (1992) defining a 'domain' as a "set of representations sustaining a specific area of knowledge: language, number, physics, and so forth" (p.6). She emphasises that a 'domain' should not be confused with a 'module' which is described as a hard-wired

information processing module. A domain specific knowledge approach offers a more plausible and valid explanation of how knowledge develops (Karmiloff Smith, 1992; Siegler, 1996). Changes are posited to occur within a domain or micro-domain, e.g. mathematical knowledge, whilst other knowledge remains constant. Robust evidence exists for the domain specific nature of knowledge. Research comparing novices' and experts' knowledge and abilities, research into naïve science theories, and evidence from cognitive neuropsychology all indicate that knowledge is domain specific (Chase & Simon, 1973; Kuhn, 1995b; Newcombe, Ratcliff, & Damasio, 1987). Thus understanding children's thinking about alcohol and television alcohol advertising is likely to be better approached from a theoretical background which incorporates domain specific knowledge.

At the same time, verbal report may not be the most appropriate way of gathering information on children's thinking and opinions. The nature, or developmental level, of their opinions and understanding of television alcohol advertising may be such that they have knowledge which they cannot express. To understand this more clearly it is necessary to define and consider firstly the nature of implicit knowledge and, then, how that knowledge is perceived as developing in Karmiloff-Smith's (1992) Representational Redescription (RR) model.

### **Implicit learning and knowledge**

Reber (1993) describes implicit learning as "the acquisition of knowledge that takes place largely independently of conscious attempts to learn and largely in the absence of explicit knowledge about what was acquired." (p.5). In a similar vein, Steffler (2001) refers to implicit cognition as "unconscious, unintentional, incidental or automatic acquisition and retrieval of knowledge" (p.169). Television advertising presents the ideal opportunity for implicit learning: it is seen, but it is not necessarily the focus of explicit attention. However, it is the terms "in the absence of explicit knowledge" and "unconscious" in the two descriptions above which explain that we can have knowledge without awareness and without accessibility for verbal report. In contrast, explicit learning can be thought of as an intentional, deliberate and conscious process which is available for verbal report. What is different about

implicit knowledge is that, unlike explicit knowledge, it appears to have particular properties in that it is not dependent on explicit learning and it has been shown to be stable, resistant to injury and it often guides behaviour (Berry & Broadbent, 1984; Reber, 1993). Moreover, Reber (1993), who writes extensively about what he terms “tacit” (implicit) knowledge, proposes that implicit learning is the “default mode for the acquisition of complex information about the environment” (p.25). If this is so, then it is quite possible that exposure to television alcohol advertisements in childhood influences children’s thinking about alcohol.

Research into implicit knowledge and learning has grown in recent years with measures of implicit cognition in adults being seen as increasingly important in understanding behaviour (Berry & Broadbent, 1984; Reber, 1993; Underwood, 1996). Recent research into alcohol attitudes and behaviour in adolescents and adults has successfully employed methodologies that tap implicit knowledge (Stacy, Ames, Sussman, & Dent, 1996; Wiers et al., 2002), whilst in advertising, for example, Perfect & Askew (1994) also found evidence of implicit knowledge. In their study, advertisements seen in a magazine were rated more favourably than non-seen advertisements both by participants who had been explicitly asked to remember the advertisements in a magazine and by participants who had simply looked through the magazine. Whilst their studies were based on adults, there is no reason to believe the same effect would not occur in children. Certainly, studies of non-verbal communication, e.g. eye gaze (Alibali, Flevaris, & Goldin Meadow, 1997) and gesture (Pine, Lufkin, & Messer, 2004) not only support the presence of underlying implicit knowledge in children, but also indicate its precedence. For example, studies of gesture in children indicate that gestures precede verbal report and can reflect knowledge that is more advanced than verbalised knowledge.

Whilst there is strong support for the presence of implicit knowledge, in adult research implicit and explicit knowledge are sometimes treated as dichotomous. Reber, however, argues that they are parts of a continuum and this idea is particularly well embodied in Karmiloff-Smith’s (1992) Representational Redescription (RR) model.

## **Representational redescription**

Karmiloff-Smith's (1992) Representational Redescription (RR) model explores the development of children's knowledge through understanding how representational changes occur over time. Unlike age-stage theories where knowledge can be absent at one time and yet present shortly after that, the RR theory takes a developmental view of domain specific knowledge. It posits that knowledge can be represented in different formats and at different levels of explicitness, only some of which may be available for verbal report. This may result in knowledge which children have, but which they cannot express in language. Indeed, most people have experienced the feeling where they know something, but are nevertheless unable to express it, although this is not because they lack the necessary vocabulary. This is especially the case for children at a time when knowledge is expanding rapidly in many different domains and clearly important when considering researching their thoughts and opinions.

To understand how implicit knowledge features in the RR model it is necessary to consider the model and process in more detail. Karmiloff-Smith proposes implicit knowledge as the starting point for the developing knowledge. This may be innate, in the form of predispositional biases for accommodating or channelling incoming information (e.g. language) or it may be acquired exogenously as, for example, through television advertising. From this basis, knowledge develops through a domain general process of "representational redescription". As a result, knowledge is endogenously and spontaneously abstracted and redescribed into another format, for example "a spatial representation might be recoded into linguistic format, or a proprioceptive representation into spatial format". (p.23). These redescribed representations are stored in different formats with progressively different levels of accessibility, or explicitness, to its own domain, to other domains and to verbal report. Echoing Reber's assertion that implicit and explicit knowledge are not dichotomous, Karmiloff-Smith says, "in many instances children develop explicit representations which lie between the implicit representation and the verbally reportable data". (p.192).

In the RR model four levels of knowledge are identified: the implicit level (LI), levels E1, E2 and the explicit level E3, with only the latter available for full verbal report. Thus, at level LI, knowledge is described as being encapsulated and not available for use at either an intradomain nor interdomain level. Nonetheless it is available for use as a whole in terms of behaviour, allowing immediate response to environmental demands. At the next level, E1, knowledge is abstracted from the implicit knowledge through representational redescription. However the knowledge, whilst beginning to be available intradomain and interdomain, is in a reduced, compressed format. This frequently results in conflicting, incorrect or incomplete responses which arise from oversimplification and overgeneralisation, e.g. the temporary use of 'goed' instead of 'went' by infants (Marcus, 2004), or attempts to balance an unequally weighted beam on a central fulcrum (Pine & Messer, 1999). As the domain general process continues over time domain specific knowledge becomes more complete and correct, more available for use in other domains and more explicit. At level E3 accurate verbal report is available.

The RR model and theory suggest not only the presence of implicit and explicit knowledge, but also the presence of knowledge at levels in between which allow for knowledge, but not necessarily for accurate verbal report. Karmiloff-Smith (1992) cites examples from a number of areas such as language, mathematics and scientific knowledge of how the process can explain knowledge development. Recently, it has been used to investigate children's theories of balance (Pine & Messer, 1999) and spelling (Steffler, 2001). What is revealing about such studies, and pertinent to exploring children's thinking about alcohol advertising, is that whilst explicit measures tend to indicate age differences in knowledge, measures of implicit knowledge reveal a great deal of similarity across ages.

In their 1999 study, testing children's abilities with balance beams, Pine & Messer further developed the RR model. Suggesting that change was far more gradual than age-stage theories proposed, they based their findings on how successful children were at balancing beams, the strategy they employed and the explanation they gave. As a result Pine & Messer proposed more, and different, levels of knowledge and these can be found in Table 1.1.

**Table 1.1. Terms and levels of domain specific knowledge**

<b>Representational Redescription (Karmiloff Smith, 1992)</b>	<b>Pine &amp; Messer (1999)</b>	<b>Terms used in thesis</b>
LI	Implicit	Implicit and non-verbal
	Implicit transition	Pre-explicit
E1	Abstraction non-verbal	“
	Abstraction verbal	”
E2	Explicit transition	
E3	E3	Explicit

Note: The term “pre-explicit” used in this thesis refers to those levels of knowledge between implicit and explicit.

As the table shows, in the Pine & Messer (1999) study, children were identified who could not produce verbal report for the first three levels of knowledge: implicit, implicit transition and abstraction non-verbal. Whilst over-generalisation and over-simplification were seen in children’s strategy at the latter two levels, the same over-simplification was apparent in children’s explanations at abstraction verbal level. In the explicit transition stage a reasonable explanation of strategy was provided, but it was not until E3 level that explanations of the underlying physical concepts were produced (i.e. mention of the relationship between weight and distance).

Furthermore, their findings that the children’s ability to verbalise their theories was not related to linguistic ability suggested that it was the level of understanding and knowledge that was the cause of not being able to articulate their ideas. As a result, in common with Karmiloff-Smith, they concluded that children’s knowledge should be explored by measures which access both implicit and explicit representations as “[children’s] explanations only give us part of the picture” (p30).

With regard to column 3 of Table 1.1, these, more general, terms (‘implicit’, ‘pre-explicit’ and ‘explicit’) are used in this thesis as the methodologies employed in the research for this thesis reflect theoretical considerations rather than test individual levels of knowledge specifically. However, on those occasions when it is more

appropriate and useful to refer to them, more specific levels of knowledge may be used.

The theoretical implications considered so far all indicate that methodologies for researching children's thinking need to be broad in scope. They need to consider domain specific knowledge and the different ways in which children know about things. Siegler (1996) also considers these important. Adopting a domain specific view, he approaches development from the idea of cognitive variability.

### **Cognitive variability**

Cognitive variability encompasses the idea that children's thinking is variable and dynamic, providing children, and adults, with choices to be made in terms of knowledge and strategy. Siegler (1996) argues that rather than learning about something in one way and developing a single strand of thinking, knowledge is acquired through a number of different sources offering multiple ways of thinking about things and the availability of multiple strategies. This is beneficial both in terms of adaptability and of development.

Research provides evidence to support the idea of cognitive variability. In a study assessing children's addition strategies (e.g. the min strategy, counting fingers, counting from 1, no visible strategy), 27% children were found to use all four strategies within the study (Siegler & Robinson, 1982). Children have also been found to approach the same problems in a number of different ways, both on different occasions and within one trial, and to display mismatches between gestures and verbal report (Siegler, 1996). In terms of benefiting development, studies have shown that children who display greater diversity in strategy use are more likely to advance in their learning than those with fewer strategies (A. J. Wright, Nichols, Graber, Brooks-Gunn, & Botvin, 2004).

As a proposal, cognitive variability not only complements the RR model in terms of the different levels and formats of knowledge representing the multiple ways of knowing, but it also recognises that cognitive development is far less straightforward



than age-stage theories propose. To illustrate the development of children's thinking, Siegler (1996) uses an overlapping waves analogy with multiple waves representing strategies which are all available and which rise to the top according to the frequency with which they are used and which, with increasing skill, may be replaced by others in terms of frequency. In common with Pine & Messer (1999), Siegler (1996) concludes that change is far more gradual than age stage theories predict and points to evidence from microgenetic studies which captures change on a far more reduced time scale than studies which investigate children's development at, say, two yearly intervals (Kuhn, 1995b).

From the perspective of the research in this thesis, the idea of cognitive variability suggests that children learn about alcohol in a number of different ways, from a number of different sources and that the knowledge arising from these different ways may well be in competition with each other. Television alcohol advertisements represent one such source. To use Siegler's analogy, one part of the programme of work undertaken for this thesis seeks to establish the extent to which knowledge about alcohol arising from television alcohol advertisements remains among the overlapping waves and the frequency with which it is the chosen information source. In other words, what is the contribution of alcohol advertisements to children's thinking about alcohol relative to other sources?

### **Ways of knowing**

The implications of the theories considered here on the development of suitable methodologies are clear. Knowledge, and its development, is complex and variable. Age stage theories and verbal report impose limitations on findings and neglect a wealth of knowledge that children may have, but which they are unable to express. Verbal expression alone, particularly in children, may not necessarily accurately represent the true extent of their knowledge nor, perhaps, does it present an accurate guide as to how they will behave. At the same time, implicit knowledge reveals fewer age-related differences than explicit knowledge. To understand children's thinking about television alcohol advertisements, methodologies need to reflect these theories, to be able to tap into these different levels of representation and to consider

alternative ways of knowing and thinking about things. In the next section the findings of existing research in this area are evaluated in light of these theoretical concerns.

### **A review of existing research**

As research findings in this area can be divided fairly neatly into the appeal and understanding of television alcohol advertisements on the one hand and its potential as an influence on behaviour on the other, then this approach is adopted both in this section, and in the thesis as a whole. Whilst the emphasis is on reviewing the methodologies, consideration in this section is given to findings from a range of studies which are representative of those present in the literature. Findings from existing studies are further considered within individual chapters and a more extensive summary of research, largely concentrating on children over the age of 10 years, can be found in the author's report in Appendix A.

#### **Alcohol advertisements: appeal and understanding**

Research suggests that children as young as 10 like televised alcohol advertisements, they may include them in lists of favourite advertisements and they tend to rate them more highly than other advertisements aimed at adults (Aitken, Leather et al., 1988; Waiters et al., 2001). However, some 10 year olds dislike alcohol advertisements altogether and, overall, children aged 10 are far less enthusiastic about them than 12 year olds. It seems as though liking increases with age and researchers attribute this to product salience increasing with age (Aitken, Eadie, Leather, McNeill, & Scott, 1988; Aitken, Leather et al., 1988; Waiters et al., 2001).

However, four of the studies which contribute substantial findings to the children and alcohol advertising debate are based on interview data. Thus, there has been a reliance on explicit knowledge. For example, Aitken, Leather et al. (1988) held group interviews with 150 children aged 10 to 16 years for one study and conducted individual interviews with 433 children aged 10 to 17 years in another study (Aitken,

Eadie, Leather, McNeill, & Scott, 1988). More recently, in California, Waiters et al. (2001) held focus group discussions with 97 children aged 9 to 15 years, whilst the Dring & Hope (2001) report was based on the findings from focus groups of 180 adolescents aged 12-17 years in the Republic of Ireland. All found aged-related differences, but in view of the theoretical propositions concerning implicit and pre-explicit knowledge, the extent to which this is a complete reflection of children's opinions must be questioned. Whilst explicitly children's knowledge may vary at different ages, these contrasts may not be as noticeable if knowledge is accessed using alternative techniques which do not rely on the verbal production of knowledge. If this is the case, then it would suggest that television alcohol advertisements may be more influential than children's verbal report conveys. Certainly, researchers in another alcohol advertising study, which again relied on verbal report, were aware of children's inability to voice their opinions as "the interviewers felt that answering imagery-type questions was not particularly easy for the children ... likely that those who were actually aware of the tough, active, outdoors type imagery exceeded the 45% who actually verbalized it" (Wyllie, Casswell, & Stewart, 1989, p.645). Representational redescription theory would posit that their knowledge had not been redescribed to an explicit level, e.g. E3. Whilst age-stage theories and explicit knowledge assume and highlight differences in cognitive abilities across ages, it may be more important and useful to develop methods that consider cognitive similarities.

Data from the four interview studies also revealed conflict between advertisement and product in children aged 10 and over (Aitken, Eadie, Leather, McNeill, & Scott, 1988; Aitken, Leather et al., 1988; Waiters et al., 2001). Some children would deny liking an alcohol advertisement, but when questioned about specific features of the advertisement they would express a positive view. This conflict in children's responses is suggestive of the idea that knowledge has been abstracted, i.e. it has been redescribed, but is still at a pre-explicit level as defined in Table 1.1. In other words, their knowledge may be available for verbal report, but it is not a full or accurate reflection of either their implicit or their final explicit knowledge. Measures which avoid the spontaneous verbal production of knowledge and which tap into implicit and pre-explicit knowledge may provide a clearer, more useful, response insofar as liking alcohol advertisements is concerned.

In the interview studies, finding alcohol advertisements appealing, but not the product, continued across a wide range of ages, although with maturity this opinion became more explicit. For example, whilst children around the 10 to 12 year age group might say they do not like the advertisement, but then reveal certain aspects that they found attractive, young adolescents of 13-15 years old were more likely to explicitly state that they liked the advertisement, but not the product. In this respect, some of the alcohol advertisements which portrayed an image or an aspirational lifestyle rather than concentrating on the product were popular with some children over 10 as they dissociated the advertisement from the product. In the same way, humorous alcohol advertisements were popular as they seemed to provide a way in which children could like an advertisement without necessarily liking the product. For example one of the American middle school boys in the Waiters et al. (2001) study explaining why he liked a particular beer advertisement said “I think it was because of the comedy ... because it didn’t really have anything to do with beer” (p.704). By distancing the advertisement from the product it appeared to allow him to enjoy the advertisement. Both humour and the use of animatronics in a beer advertisement, i.e. the frogs and lizards in the Budweiser advertisement, also seemed to fulfil this need, as a succinct comment, in the same study, by a American middle school girl reveals “It didn’t say [anything] about beer and it was nice. I wasn’t looking at the sign. I was looking at the main attraction – the animals” (p.712). If image and humorous advertisements are attracting children in their early teen years, are primary school children also being attracted? This, again, emphasises the need for measures which tap into their opinions of the advertisements only and not the product being advertised. This would avoid the conflict expressed by the younger children in the interview studies and provide a more accurate assessment of the appeal of alcohol advertisements.

Taken together, the implications of current developmental theories and the extent and type of existing research in this area suggests that there is a need to assess the appeal of alcohol advertising to younger children, i.e. below the age of 10, and to understand how they think about it. In particular, the methodology should reflect these theories in recognition of the complex nature of cognitive development and in order to provide the most appropriate way of accessing children’s thinking.

## **Alcohol advertising: influence**

The papers cited so far have largely dealt with how children respond concurrently to alcohol advertising. Whilst the findings suggest that liking and, in some instances, understanding alcohol advertisements increases with age in children over 10 years old, an important question remains. Can alcohol advertisements seen in childhood influence children's thinking about alcohol and their later alcohol behaviour?

The theoretical issues surrounding implicit knowledge and Reber's (1993) proposition that implicit learning is the default mode suggest that alcohol advertising could indeed be a potential influence on children's thinking about alcohol. Moreover the dynamic nature of learning suggested by cognitive variability puts this into context. Siegler (1996) explains this using the example of a skier learning to execute sharp turns. He describes not only how there may be wide variability in the way the skier learns about the turns, e.g. from books, from a teacher, from practice, but he also makes the point that the easiest turns will be adopted early on, with more difficult turns being discarded as, initially, they produce poor results. However, as the skier becomes more accomplished he or she may then favour the earlier, more difficult turns as, with greater skill, they produce better results. What then, if alcohol advertising, seen in childhood, is enjoyed, and remembered at an implicit level, but is not 'applied' until children have a wider framework into which to fit that knowledge. For example, children may see alcohol portrayed in advertisements as a means of increasing social confidence, but until they start to need that confidence, this knowledge remains dormant, in an implicit state. Then, as they move into adolescence, the lessons learnt from the advertisements are gradually abstracted from the encapsulated dormant knowledge, i.e. at an implicit level, to be fitted into the framework that they are creating about social interaction. Moreover, how this information is then used would vary both within individuals and between individuals. Do findings from studies researching the influence of alcohol advertising support this possibility?

The findings are mixed. Strickland's (1982) study of teenagers and Adlaf & Kohn's (1989) reassessment of the Strickland data found little evidence of a positive direct influence of alcohol advertising on behaviour. More recently, Lipsitz, Brake,

Vincent, & Winters (1993) also suggested that there was no effect of exposure to alcohol advertising on 10-11 year old children, and only a minor effect on 12-13 year olds. However, findings from Austin & Knaus (2000), Austin & Nach Ferguson (1995), Grube & Wallack (1994) and Dunn & Yniguez (1999) suggest that, on the contrary, exposure to alcohol advertisements may influence children's thinking about alcohol.

In an experimental study, Dunn & Yniguez (1999) found that 8-9 year old children watching beer advertisements were more likely to think positively about alcohol and in a way similar to 9-10 year olds than 8-9 year olds who watched soda advertisements. They suggest that, rather than increase positive alcohol beliefs, they accelerate them. In another study, using wide ranging survey data and based on 10-14 year old children's ability to identify beer advertisements and to finish advertising slogans, Grube & Wallack (1994) also found that an "awareness of alcohol advertising [positively] influences children's drinking beliefs, knowledge and intentions". However, as only beer advertisements were presented, thus narrowing the field, this might have biased the likelihood of advertisement recognition. Austin & Nach Ferguson (1995) found that brand specific knowledge and liking alcohol advertisements predicted drinking behaviour in 7-12 year old children, whilst general alcohol knowledge and expectancies did not. However, as Austin acknowledged, the expectancy measure required improvement as, after assessing a number of questions for validity, the measure eventually comprised only one question. Equally, the drinking behaviour measure was based on a very simple taste question which may not have been representative of normal behaviour. In studies with children 7-8, 10-11 and 13-14 years old, Austin & Knaus (2000) found that identification with characters in alcohol advertisements and desirability to be like them predicted positive beliefs about alcohol and, in the two older age groups, pre-drinking and drinking behaviour. The findings, whilst robust, may be less generalisable than some as the sample came from an above average income group. Also the theoretical basis for the study, the Message Interpretation Process (Austin & Meili, 1994) tends to rely on similarity and realism and does not appear to allow for advertisements either without a character or with an unrealistic character, e.g. the lizards and frogs used in a recent beer advertisement. Nonetheless, the findings are valuable and point to possible influence of alcohol advertising on children below the age of 10 years.

However, whilst the studies reported above indicate that researching the potential influence of alcohol advertisements on children is possible, two particular problems face researchers in this area. One is finding a suitable measure in view of children's inexperience with alcohol, i.e. consumption cannot be measured, and the other is attributing directional causality.

In terms of a measure of the influence of alcohol advertising on children's thinking and behaviour, it appears that only two studies have developed a pre-drinking behavioural measure. In a study by Austin & Johnson (1997a) which assessed the benefits of media literacy on reducing the effects of alcohol advertising, children's choice of a toy can depicting either a beer brand or a soda brand was used as a behavioural measure. This was further developed in Austin & Knaus (2000). In the improved version children were required to rate, on a 5 point Likert scale, a range of products (e.g. balls, shirts, piggy banks, etc.) bearing logos for either a beer or non-alcoholic drink. Whilst this certainly reflected a developmental approach there was, however, only low support for the use of this as a measure to predict drinking behaviour and it did not predict behaviour as well as a positive alcohol expectancy scale that was also used. Positive alcohol expectancies are the positive beliefs, or expectations, of the effects of alcohol (Christiansen, Smith, Roehling, & Goldman, 1989). The role and success of these in predicting alcohol behaviour and abuse, and the measures associated with them, are explored in much greater detail in Chapters 5 and 6, as a positive expectancy scale was the measure chosen for use in the longitudinal study in this thesis.

As far as directional causality is concerned, it is important to note that the studies reported above were based on cross-sectional findings and often relied on correlational data. Thus, one of the recurrent questions in the literature on the influence of alcohol advertising is how to establish directional causality. When findings suggest a connection between advertising and alcohol consumption, or increased positive alcohol expectancies in young people, conclusions from the studies are frequently tempered with a statement to the effect that causality cannot be attributed from such results (see, for example, Aitken, Leather et al., 1988; Austin & Knaus, 2000; Dunn & Yniguez, 1999; Grube & Wallack, 1994; Lieberman & Orlandi, 1987). In other words, the findings do not indicate whether alcohol

advertisements are stimulating an interest in alcohol in young people, or whether young people who are interested in alcohol pay more attention to the advertisements. This shortcoming has led to calls for a longitudinal study to provide time order evidence which, it has been suggested, could help to resolve this problem (e.g. Aitken, Eadie, Leather, McNeill, & Scott, 1988; Almarsdottir & Bush, 1992; Austin & Knaus, 2000; Dunn & Yniguez, 1999; Grube & Wallack, 1994; Lieberman & Orlandi, 1987). Despite these numerous calls however, there is a distinct shortage of longitudinal studies which consider the influence of television alcohol advertising on young people.

Whilst two longitudinal studies have considered the more general influence of television on alcohol behaviour in children and adolescents (Anderson, Huston, Schmitt, Linebarger, & Wright, 2001; Robinson et al., 1998), only two have investigated the longterm effects of televised alcohol advertising on adolescents (Connolly, Casswell, Zhang, & Silva, 1994; Ellickson, Collins, Hambarsoomians, & McCaffrey, 2005). The Connolly et al. (1994) study found a small, but significant, association between recall of alcohol commercials at the age of 15 and alcohol consumption, specifically beer, at the age of 18. However, this was not the same for recall at the age of 13, nor for females. Connolly et al. (1994) are understandably cautious about their findings in view of the small variance accounted for by advertising and their recognition that an increase in local advertising may have contributed to better advertisement recall at age 15 years when compared to 13 years old. However, despite providing the time order evidence of a longitudinal study, the arguments about directional causality could also be levelled at the study. There does not appear to be any account taken of whether the boys were already drinking at the age of 13 or 15, and yet this could have an important influence on their recall of alcohol advertisements.

The other, more recent, longitudinal study (Ellickson et al., 2005) was comprehensive and covered not only television advertising, but in-store displays and print advertising. Measures were collected annually from children in grade 7, when children were aged 12 to 13 years old, to grade 9 when they were 14-15 years old. Different measures were taken on each occasion. For example, a baseline drinking measure was taken in grade 7, data on exposure to alcohol advertisements, television



viewing, social influences, social bonds and attitudes towards alcohol were gathered in grade 8 and a further measure of alcohol use was taken in grade 9. After controlling for other factors, including other types of advertising, the research found no effect of television advertising. This study was admirable in that it comprised a large sample (3111 children), used a prospective design following one group of children and considered social influences as well as advertising. However, in common with many studies in this area (e.g. Grube & Wallack, 1994; Waiters et al., 2001), the study focused on beer advertising. This may be because these are the most prevalent in the US but, certainly in the UK, there are a number of advertisements for spirits and for the 'ready to drink' (RTD) beverages, e.g. Bacardi Breezer, Smirnoff Black Ice. This may underestimate the effects of alcohol advertising due to gender differences in the appeal of beer advertising and this issue is addressed in more detail in Chapter 3.

Ellickson et al. also acknowledge that younger children than those taking part in the study may be susceptible to alcohol advertising. If, as suggested earlier, knowledge gleaned from advertising has a more long term effect, as in Siegler's analogy of the skier, then it is important to investigate this from the starting point of children's exposure to alcohol advertising. However, perhaps the biggest potential problem with this study was that, by seeking to identify individual advertising influences on drinking, it controlled for a number of other factors including attitudes towards alcohol. This ignores the fact that alcohol advertisements may be significant contributors to alcohol attitudes; it seems likely that the two are connected and cannot, nor should not, be disentangled.

There continues to be a need therefore for a prospective study which commences prior to the onset of drinking, which tracks children's beliefs about alcohol over time in relation to exposure to television alcohol advertising and which takes into consideration other potential influences. This would address previous calls for such a longitudinal study to address the issue of attributing directional causality. This shortcoming is remedied in this thesis.

## **Conclusions**

This introduction has identified three main areas of concern about research into children's exposure to television alcohol advertisements. Firstly, there has been a distinct lack of research in this area, particularly with children under the age of 10 years and despite the fact that they, too, are, exposed to alcohol advertisements shown early in the evening on television. The second area is a methodological issue. There has been a tendency to over-rely on explicit knowledge and a failure to recognise the need to underpin the research with current developmental theory. Thirdly, the potential long term influence of television alcohol advertisements on children's thinking and the issue of attributing directional causality has not yet been satisfactorily addressed.

## **Aims**

As a result of these findings, the aims of the research programme reported in this thesis are:

1. to develop measures to investigate young children's thinking about alcohol advertisements on television which take into account current developmental theories and which recognise the complex nature of knowledge and its development.
2. to investigate knowledge, perceptions and responses of children below the age of 10 years to alcohol advertisements on television
3. to conduct a longitudinal study to investigate how children's beliefs and ideas about alcohol develop in relation to television alcohol advertising, thereby identifying the potential contribution of television alcohol advertising to children's alcohol expectancies relative to other known influences.

## Research programme

In order to achieve these aims, the research programme takes two complementary approaches to the studies. On one hand, three cross-sectional studies investigate the perceptions and understanding of alcohol advertisements by children in the 7 to 10 year age group. These take the form of an interview study, a categorisation study and a story-style paradigm. Measures are developed to address the developmental concerns outlined earlier in this chapter, such as accessing children's implicit and pre-explicit knowledge. In these studies, therefore, the concurrent effects of the appeal of alcohol advertisements and children's thinking about them are investigated.

On the other hand, the predictive nature of exposure in childhood to alcohol advertisements as a potential influence on later alcohol behaviour is investigated in a longitudinal study. This follows a group of more than 100 children over a 3 year period starting when they are 9 to 10 years old, i.e. pre-onset of drinking, until early adolescence when they are 12 or 13. Over this time changes are tracked, at six-monthly intervals, in children's ideas and beliefs in relation to a number of known potential influences on children's positive alcohol expectancies. This includes awareness of television alcohol advertisements. In the longitudinal study, the generic effects of alcohol advertising are sought, rather than specifically brand related effects. In other words, does exposure to alcohol advertisements in childhood increase children's later alcohol expectancies? A structural equation model is used to assess the directional relationship between the two.

The division of cross-sectional and longitudinal studies is reflected in the chapters in the thesis. Thus, chapters 2, 3 and 4 report the cross-sectional studies. The following four chapters, chapters 5 to 8, are devoted to the longitudinal study with a chapter each devoted to background, the development of measures, tracking changes over time and, finally, data modelling. In addition to the discussion at the end of each chapter, there are two general discussions at the end of Chapters 4 and 8 related to the findings from the cross-sectional studies and from the longitudinal study respectively. Finally, the conclusions in Chapter 9 set out how the research programme has met the stated aims of the thesis, the applied findings of the research, the theoretical considerations, e.g. the applicability of current developmental theories

to cultural influences, and suggest how this research could be developed in the future.

Whilst some conclusions are drawn throughout the thesis as to the different levels of knowledge found in children's thinking about alcohol advertisements, the aim is not, as already mentioned, to test any particular theory, (e.g. the RR model), but to use what is known about children's development to investigate this issue and to adopt an approach that reflects the overarching principles outlined earlier, namely that:

- the methods and interpretations of findings in this area need to be underpinned by current developmental theory;
- knowledge can be acquired without awareness;
- not all knowledge is available for verbal report;
- implicit and pre-explicit knowledge can drive behaviour;
- report of knowledge at a pre-explicit level may not be an accurate representation of either implicit knowledge nor of children's final explicit knowledge;
- children have multiple ways of thinking about alcohol and alcohol advertisements on television which need to be reflected in methodologies;
- children's thinking is variable and dynamic and, as such, long term effects need to be investigated.

Thus, the research reported in this thesis aims to avoid the limitations imposed by age-stage theories and verbal report. Methods are developed specifically to tap into different ways of knowing, e.g. implicit, pre-explicit and explicit knowledge. At the same time, the direction of influence between children and alcohol advertisements is addressed in a longitudinal study, the first of its kind to be conducted.

## Chapter 2

### **The appeal of alcohol advertisements: a qualitative study**

As indicated in Chapter 1, studies exploring young people's responses to television alcohol advertising have, in general, been carried out with adolescents in the 12 to 18 year old age range (see, for example, Adlaf & Kohn, 1989; Dring & Hope, 2001; Kelly & Edwards, 1998; Unger, Johnson, & Rohrbach, 1995). Occasionally research has included children as young as 10 years old (e.g. Aitken, Leather et al., 1988; Lipsitz et al., 1993; Wyllie, Zhang, & Casswell, 1998). However, the very few studies with children below the age of 10 (Austin & Johnson, 1997b; Austin & Knaus, 2000; Austin & Nach Ferguson, 1995; Dunn & Yniguez, 1999; Waiters et al., 2001) suggest that little is known about whether children of this age find television alcohol commercials attractive and what messages they take from them. This chapter and the two that follow are therefore devoted to studies with children in the 7-10 year age group: that is, Years 3, 4 and 5 at primary school. In this chapter a qualitative study is reported. This took the form of interviews with seventeen primary schoolchildren, asking them for their opinions on alcohol advertisements. In Chapter 3, the findings are presented from a quantitative study where similar information was sought, but which used methods that did not rely on explicit knowledge. Chapter 4 reports on a study which used a story style paradigm to assess children's beliefs arising from the messages purveyed by televised alcohol advertisements, thus again avoiding explicit knowledge.

What issues need to be considered when exploring children's responses to alcohol advertising? As indicated in Chapter 1, one of the most important is to discover whether children find alcohol advertisements attractive and appealing, as the appeal, or likeability, of any advertisement has been shown to be linked to its effectiveness (Comstock & Scharrer, 1999). Moreover, in research with adolescents, liking

television alcohol advertisements has been shown to be associated with alcohol behaviour, e.g. underage drinking, (Aitken, Eadie, Leathar, McNeill, & Scott, 1988; Unger et al., 1995; Wyllie et al., 1998) and with increased alcohol consumption (Unger, Schuster, Zogg, Dent, & Stacy, 2003). Therefore, an exploration of the appeal of alcohol advertising to children, at a period well before the onset of alcohol consumption, provides information as to one possible source of influence on children's beliefs and expectations of alcohol. Thus, this study concentrated on whether children found current televised alcohol advertisements attractive, who they thought would be attracted to watching the advertisements, and whether they thought they were effective, i.e. would the advertisements encourage them want to try the products.

An important consideration in advertising research, and in assessing the appeal of alcohol advertising, is that of the effect of different styles of advertisement. Styles vary according to whether the attempt to persuade takes a rational (cognitive) or emotional (affect) approach. Research by Covell (1992) and Kelly & Edwards (1998) indicates that preferred styles differ by age and by product and therefore this study, and the one that follows, ensured that a variety of advertising styles were included. Whilst Covell's study concentrated on two specific styles of advertisement, product quality and image, the author's study also included humour as an additional style, as it is frequently employed in alcohol advertising and, as indicated in Chapter 1, is popular with children. The following defines the styles and presents examples drawn from one particular brand of beer which cover each of these styles.

- *Product quality advertisements* are those which emphasise the positive qualities and specific characteristics of the product being advertised. For example, in beer advertising this may result in an advertisement which concentrates on the quality of the ingredients, the freshness of the product and its ability to refresh.
- *Image advertisements* associate the consumption of a product with a particular lifestyle to which the consumer may aspire; for example, an image advertisement might show how a group of young people are connected by using identical sayings, drinking the same beer, etc.

- *Humorous advertisements* may include features of image advertisements or humour may sometimes simply be used as a feature to attract attention whilst bearing little relation to the product involved, e.g. using animatronics, such as lizards and frogs, to say the name of the product.

As mentioned in the introduction to this chapter, this first study comprised interviews with a number of children. After having emphasised in Chapter 1 the paucity of information obtained by verbal response, why begin with such a study? Firstly, because it would appear to be the first time children as young as 7 have been asked for their views on televised alcohol advertising, and thus it provided a starting point for gaining access to children's thinking about alcohol advertisements. Secondly, despite not tapping into children's implicit or pre-verbal knowledge, verbal report reflects one 'way' of knowing and is indicative of representations at a particular level of development. Thirdly, it provided a baseline of knowledge against which findings from studies using other methodologies could be compared, e.g. for age-related differences. Finally, it provided access to the vocabulary that children employ when referring to advertising which could then be used in designing studies requiring pre-explicit responses.

All of the interviews in this study were centred on advertisements which children previewed before responding to questions. In this way reliance on recalled knowledge was avoided. However, rather than only expose children to alcohol advertisements it was thought more appropriate to show them both alcohol and non-alcohol advertisements, thus reducing the emphasis on the alcohol element of the study. This provided an added benefit in that it also enabled comparisons to be made between the two types of product category. The transcribed data was analysed according to children's responses to each question and thematic coding was used to explore the cognitive developmental aspects of their replies (Robson, 2002). As a result, children's explicit knowledge of alcohol advertising was gathered and analysed in such a way as to enable comparisons with previous studies which have been undertaken with older children, and to evaluate the findings in relation to current debates about the development of children's thoughts and representations.

## Method

### Participants

A total of 17 children were interviewed comprising 9 boys and 8 girls with a mean age of 8 years 9 months ( $SD = 12.22$  months). Interview groups were determined by year group and gender. The mean ages for the groups were

Year 3 ( $n=6$ )  $M = 7$  years 8 months ( $SD = 3.43$  months);

Year 4 ( $n=5$ )  $M = 8$  years 8 months ( $SD = 4.44$  months);

Year 5 ( $n = 6$ )  $M = 9$  years 11 months ( $SD = 3.25$  months).

The children all came from a single-form entry primary school in Hertfordshire. Parents were informed of the nature of the interviews and provided written consent. A low return of 18% of consent forms was partially determined by the school as short notice was provided in terms of return of the form, although not in terms of notice of the study.

### Materials

A bank of sixteen advertisements, eight for alcohol products and eight for non-alcohol products, was created for use in both this study and the one reported in Chapter 3. The advertisements were chosen from a selection pre-recorded during early evening television before the watershed, i.e. between 6.00 pm and 9.00 pm. Seventeen TV alcohol commercials were recorded from ITV1 and C4. Each advertisement was then rated in terms of it being a good example of a particular subscale of the AEQ (i.e. attracting the opposite sex, social success, arousal, etc.), whether they were funny, whether they offered product information only (i.e. product quality advertisements) and whether they were perceived as being aimed at men, women or both sexes. Ratings were given by 12 people: 4 children under 10, 4 teenagers and 4 adults. Eight alcohol advertisements were selected from the original 17, based on these ratings, i.e. the highest scoring advertisement in each category was chosen as the most representative of its group. Eight non-child directed commercials for non-alcoholic drinks or food products were then chosen to match the alcohol ads as closely as possible, e.g. the Boddingtons cartoon advertisement



was paired with a Red Bull cartoon advertisement, the Budweiser advertisement, a product quality advertisement, was matched with a similar style advertisement for Baxter's soup. Table 2:1 below lists all sixteen advertisements and the criteria by which they are matched. For a detailed description of each advertisement see Appendix B.

**Table 2:1. Criteria for matched advertisements for qualitative and categorisation studies**

<b>Alcohol</b>	<b>Non-alcohol</b>	<b>Style</b>	<b>Matched features</b>
Archer's (spirits)	Diet Coke (drink)	Humour and image	Male/female interaction/ social
Bell's (spirits)	Nutrigrain (cereal bars)	Product quality	Music
Boddington's (beer)	Red Bull (energy drink)	Humour	Simple, visual humour Cartoon
Bacardi Breezer (spirits/mixer)	Munchbites (biscuits)	Humour	Animal/male doll Relaxation
Budweiser (light beer)	Baxter's (soup)	Product quality	Visual focus on product
Guinness (beer)	Lucozade (energy drink)	Image	Achievement Arousal
John Smith's (beer)	Ferrero Rocher (chocolates)	Humour	Simple, visual humour Cognitive impairment
Smirnoff Black Ice (spirits mixer)	Kaliber (non-alcohol beer)	Humour and image	Sophisticated humour Cognitive improvement

As the aim of this qualitative study was to get a general picture of children's attitudes towards alcohol advertising, six alcohol and six matched non-alcohol advertisements, reflecting a number of different types of advertising (style and presentation), were selected from the bank of advertisements for viewing. The advertisements used in this study were Bacardi Breezer, Bell's, Boddington's, Budweiser, Guinness, and John Smith's in the alcohol category and their matched non-alcohol advertisements: Munchbites, Nutrigrain, Red Bull, Baxter's Soup, Lucozade and Ferrero Rocher.

All interviews were recorded on a Panasonic microcassette recorder and then transcribed.

## **Procedure**

Children were interviewed in groups of 2 or 3 children of the same sex and same year group, away from their classroom. Children were first asked to name their favourite advertisements. Each group of children then watched the pre-recorded television advertisements on a laptop computer. They were presented with just four of the twelve selected advertisements, two each from the alcohol and non-alcohol categories. The advertisements chosen were representative of different styles of advertising. For example, one group of children watched two product quality style advertisements, one alcohol and one non-alcohol, and two humorous advertisements, again one alcohol and one non-alcohol. After viewing each advertisement on screen, the children were questioned about it in a semi-structured interview (see Table 2.2 for details of the questions). Where close ended questions were used, these were followed by 'why' probes.

**Table 2.2. Semi-structured questionnaire for the qualitative study**

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1. What was that advertising?
  2. Tell me what you think about that advert.  
How does it make you feel? What do you like/dislike?
  3. Who do you think would watch that advert when it's on television?  
Anyone else?  
  
Would you watch it? Why would you watch it? / What was it about the advert that would make you interested?  
Do you think (other) children would watch it? Why/why not?
  4. What does it tell you about the product/drink/food?
  5. How does the advert make you feel about the product/drink/food?
  6. Does it make you think you'd like to try it? Why/why not?
-

The questions were structured to relate to their feelings and their response, in general, to each advertisement. Equally, their understanding of the advertisement in terms of the product being advertised and the target audiences were questioned. At the end of each interview the children were thanked for their views and a brief discussion was initiated by the interviewer to advise the children that alcoholic drinks were for consumption by adults. Transcripts of the audio tapes from the interviews were used for analysis

## **Analysis**

Coding of the transcripts was undertaken manually. A template approach was used initially for content analysis with the framework centred round the core questions in the semi-structured interviews. A coding template was prepared to analyse the data by question, year group and type of advertisement. However, in addition to the core category of responses to questions about children's appreciation and understanding of alcohol advertisements, a second core category emerged during initial coding. This related to cognitive developmental issues and led to the data being re-analysed using a thematic approach (e.g. age-related differences, cognitive variability, etc.) for these issues only (Robson, 2002). Analysis of the transcribed interviews is therefore reported in two principal sections. In the following data section the children's responses, analysed by question, appear first under the heading "Knowledge and opinions" as they present children's explicit knowledge and are therefore pertinent to the second part of the data analysis, entitled "Meta-understanding", which focuses on more theoretical themes.

Whilst on some occasions it was possible to follow one child's responses, in general due to the nature of the focus groups it was not possible to identify children individually. As a result, whilst a table summarising the levels of children's responses to each of the four advertisements they viewed may have proved useful, without videotape evidence of exactly who was speaking it would be difficult to provide this information with any accuracy.

## **Knowledge and opinions**

### *Favourite advertisements*

Few children were able to spontaneously name their favourite advertisements, although the older children were slightly better at this than the younger ones. The maximum number of advertisements nominated by any group was five. However, none of the nominations, by any of the groups, included alcohol advertisements.

### *The appeal of alcohol advertising:*

*Tell me what you think about that advert. How does it make you feel? What do you like/dislike?*

All of the children interviewed appeared to like the advertisements for non-alcoholic products, irrespective of style of advertising. However, only children in Years 3 and 4 were unanimous in their liking of all of the alcohol advertisements. In particular the advertisements for Bacardi Breezer, Boddington's and John Smith's were very popular, evoking a lot of laughter amongst the children, with one Year 4 girl suggesting that the Bacardi Breezer advertisement was too short.

When asked why they liked the advertisements, the Year 3 and Year 4 children tended to cite two elements. Firstly, they found the humour in the advertisements particularly attractive, for example when talking about the Bacardi Breezer advert, one Year 3 boy described it as "really, really, really, really funny" and a Year 4 girl "thought it was funny because the cat, it kept jumping up and down". Equally, the Boddington's advertisement elicited a similar response with comments such as "love this one", "really funny" and "it was just funny and silly". The diver starting to lose his shorts in the John Smith's advertisement was a source of amusement for the Year 3 girls. Even the Bell's advert, included as a product quality advertisement and not originally rated as humorous, was perceived as "funny" by Year 3 boys.

Secondly, the Year 3 and Year 4 children tended to refer to the literal or immediate perceptual content of the advertisement, e.g., “I liked the piano”, “I liked the man” and “I liked the twirling around” (referring to the diving in the John Smith’s advertisement). The children also liked content which was of personal interest to them, so, for example, two Year 4 boys were drawn to the Guinness advertisement “because it was a sport advert” and “it was about hockey”, and one of the Year 3 girls stated that she liked the John Smith’s advertisement because she enjoyed swimming and diving. However, beyond the perceptual and personal interest content of the alcohol advertisements, the children were less able to indicate their affective response to the alcohol advertisements when asked how it made them feel. Questions of this nature were met with long silences, or just brief responses such as “it was just good”. Occasionally it resulted in the storyline of the advertisement being reiterated.

However, the Year 5 children’s responses to the attractiveness of the alcohol advertisements, but not the non-alcohol advertisements, differed to those of the two younger groups of children. The Year 5 children, aged 9 to 10 years old, frequently stated that they did not like the alcohol advertisements. In light of conclusions from previous studies that personal product saliency increases the appeal of such advertising as children age, this merited closer investigation as it appeared that their interest was waning rather than growing.

Probing into the Year 5’s dislike of the alcohol advertisements was revealing. Whilst one Year 5 boy’s initial response to the Bell’s advert during viewing was a simple “I don’t like it”, further enquiry led to his reply that “I don’t like adverts about, like, drink and that.” The same boy, when asked what he thought about the Bacardi Breezer advertisement said that it was “not good”, and yet, when pressed further, he revealed that he “like[d] the football bit. And I like the cat bit”. As these are the two main features of the ten second commercial which does not display a drink at any point, then it suggests that, again, his “not good” response was to the product being advertised rather than the advertisement itself. Similar conflicts were found in Year 5 boys’ responses to the John Smith’s advertisement. For example, whilst one boy on the one hand, commented that “this one’s well funny” and referred to the “good humour” of the advert, the following comments were also made by the same child: “I don’t really like adverts like that”, although the reason given in this

case is “because it’s not really saying anything about it. It’s just showing something totally different.” In fact, this boy said three times that he did not like the advertisement, but still referred to its good humour. The same boy referred to the Budweiser ad as “a rubbish advert”, although this time suggesting that it was a poor advertisement with little persuasive effect. The girls in Year 5 watched the Guinness and the Boddington’s advertisements. None of the girls liked the nature and content of the Guinness advertisement which they perceived as an advertisement about football with “one tiny little bit about beer”, and that “All it tells you is about football ... and pigs”. However, when asked what information the advertisement supplies about the beer, one girl said “It makes you drunk”, when it clearly does not state this. Thus, in the same way that the appeal of Bacardi Breezer advertisement was affected by the Year 5 boy’s verbal rejection of alcohol, so it appears that this girl was able to implicitly identify the alcohol element and incorporate knowledge from her schema of alcohol behaviour.

Only one alcohol advertisement escaped the Year 5 children’s dislike. The Boddington’s advertisement provoked a positive response amongst the Year 5 girls, with two of the three girls who viewed it openly liking the advertisement: “I love that because it’s extremely funny” said one girl. These two girls also liked the characters portrayed in the advertisement and, when asked about the effect of the advertisement being in cartoon form, one of the girls responded “We like cartoons more because, cos ... it’s like boring if it’s grown up.” This suggests that she perceives cartoons as being aimed at children.

Nonetheless, the third Year 5 girl’s responses to the Boddington’s advertisement seemed to mirror those of the Year 5 boys’ negativity in that she was noted laughing whilst watching it, but afterwards she denied liking it. However, she did admit to liking particular parts of the advertisement, although even these views changed throughout the interview. For example, early on in the interview she states that “I don’t like it when the shark comes to bite his arm and when the fish comes and sees him, he just smacks him round the face. I didn’t like that.”, but later she says “I laughed a bit when he was just underwater and he smacked the fish round the face. .... I liked that bit”. Not only did her explicit verbal response display confusion, but she appeared unaware of this.

***Identifying the product:***

***What was that advertising?***

The children were unable to identify the product being advertised in some of the alcohol advertisements. This was not surprising in some instances as the product was not always prominently displayed. For example, neither the Guinness nor the John Smith's advertisements portrayed the product until the last few seconds of the commercial (20th sec of 30 sec ad and 37th sec of 40 sec ad respectively). In the Bacardi Breezer advertisement the product was not displayed at all: only bottle tops bearing the Bacardi Breezer logo were shown, one on the cat's collar (at 2 seconds) and five in the closing scene (at 8 sec of 10 sec ad).

Overall the ability to identify the product did not differ by age group, although one Year 5 boy did recognise that the Bacardi Breezer advertisement was advertising an alcohol drink, but could not remember the name. Even the Budweiser advertisement, which clearly displays the product, was mistaken by one Year 3 girl as a Coca Cola advert; the other Y3 girl suggested it was wine. One of the Year 4 boys perceived the Guinness advertisement as being about "playing a match" and when discussing the Boddington's advert later on talked about it being "like a beer advert, ... like the beer in the hockey advert", referring back to Guinness commercial, suggesting that he had not grasped the true nature of either advertisement. The girls in Year 4 were certainly unclear as to the product being advertised in the Bacardi Breezer commercial responding that it was "advertising loads of things like TV and football", and making comments such as "it's got, like, people to get cats or dogs" and "we thought it was advertising football and cats and ...". One of the Year 5 boys recognised the John Smith's advertisement, but expressed the view that he could not initially remember what it was for – "I thought at first that it was something advertising sports and, like, clothing. It could be a sports' clothing thing." Product identification, then, proved to be difficult in some instances.

*Perceived target:*

*Who would watch this advertisement?*

Children's responses to this question centred around family members for the younger children, e.g. "my dad", "my mum" and more generic referent groups, e.g. "men", "adults", "alcoholics" for the older children; the implications of this are discussed in more detail under theoretical issues. However it was the use of the term "alcoholics" by one child that was indicative of children's beliefs about advertisements in general: that only those people interested in the product would watch the advertisement, i.e. a personal product salience perception. For example, Year 3 girls suggested that only adults and teenagers would watch the John Smith's advertisement because "they're big" and "they like beer", Year 4 girls thought that "all men who like Guinness and beer would probably like to watch it" and Year 5 boys suggested that "people who'd like to drink wine" would watch alcohol advertising. Indeed, it was not limited to alcohol advertisements, for example, it was suggested that the Baxter's soup advertisement would only be watched by those who like soup. Nonetheless, certain aspects of advertisements were acknowledged as being attractive to particular groups, e.g. boys liking football in the Bacardi Breezer advertisement.

With the exception of the Boddington's advertisement, where two out of three Year 5 girls suggested that children would watch it, this perception of personal product salience appeared to lead children to believe that children, in general, would not watch alcohol advertising on television. However, this may be more related to a belief in their ability to choose which advertisements they attend to. As one Y5 boy said about the John Smith's advertisement "They wouldn't choose to watch it. If they could choose out of, like, the chocolate advert and that advert I think they'd choose the chocolate advert." However this same boy, whilst watching the John Smith's beer advertisement had said, "Oh yes, I've seen this. This one's well funny." which suggests that not only had he seen it before, but he had attended to it. As already indicated, identification of the advertised product is often poor, therefore in normal circumstances children would have to watch all the way to the end of the advert before 'realising' that it is not of interest to them. The children appeared to be unaware of this and it is interesting to note that children in all three year groups



indicated that the alcohol advertisements were familiar from comments made during their screening such as “I’ve seen this ad” and “Seen this, I’ve seen it”. In some instances, these remarks included children’s appreciation of the advertisement, e.g. “Love this one”.

***Desire to try:***

***Would this advertisement make you want to try it?***

Responses to questioning about trying the advertised product varied, across products, within products (i.e. different children saying different things about the same product) and within children, in that they would change their opinion within the interview.

In spite of the Y3 boys pointing out that alcohol was for adults, they all wanted to try Bell’s whisky and were equally positive about Bacardi Breezer. One of the Year 3 girls thought that the John Smith’s advertisement might persuade her to try it. Year 4 boys were unanimous that they would like to try both Guinness and Boddington’s beer. Moreover, of the four advertisements that they viewed, they felt that the Boddington’s advertisement was the most persuasive, leading one boy to say that he would like to “drink it just now”. The Year 4 girls thought that both the Bell’s and Bacardi Breezer advertisements might encourage adults to try the products.

In line with their denial of liking the alcohol ads, all three Year 5 boys said they would not want to try the products, with one saying that he did not like drinking wine. Another boy, however, suggested it was because the advertisement was not persuasive, e.g. “It doesn’t really persuade anyone or anything” and “it doesn’t really say anything about it”. Again, only the Boddington’s advertisement received a positive response: after an initial negative response, two of the Year 5 girls changed their minds and said they would like to try it when questioned further about the Boddington’s advertisement.

## **Meta-understanding**

### *Explicit representations of television alcohol advertising*

What do these interviews tell us about the theoretical issues underlying children's explicit representations of alcohol advertising? Whilst the overall impression from verbal report is that the older children's representations appeared to be more explicit than those of the younger children, thematic coding revealed that not all differences in explicit knowledge could be attributed to what could be regarded as age-related factors. Category related differences were also indicated, together with evidence that suggested multiple ways of thinking about alcohol advertising, i.e. cognitive variability.

### *Age related differences*

As explicit knowledge is more likely to change with age, an interview study should provide evidence of age related differences and this was, indeed, the case in this study. Rather than simply comment on the content of advertisements at a perceptual level, such as referring to "the piano", "the man" or "the cat", as Year 3 children did, the older children tended to bring conceptual issues, for example, the persuasive element of advertising, into their discussions. Nonetheless, the younger children were also able to make inferences, for example Year 3 boys suggested that Bell's whisky is "for grown ups, it's sold in clubs". Equally one Year 4 girl was able to separate the advertisement from the product in her comment about not liking the whisky in the Bell's advertisement.

Even within age groups subtle differences in levels of knowledge were identifiable. For example, two Year 5 boys both acknowledged the persuasive aspect of advertising, however one of the boys failed to recognise it in the Budweiser advertisement. Whilst this boy commented that "there's not much persuasion in it", the other boy not only recognised the advocatory nature of advertising, but was able to identify it in his acknowledgement that "it does show you it's the 'king of beers' though".

Age-related differences were also apparent in responses to the question “Who would like to watch this advertisement?”. Whilst children in all of the age groups referred to family members, it was more noticeable among the younger children, with comments such as “my dad would watch it”, “my mum would watch it” and “my granddad would even watch that”. It was the older children, particularly those in Year 5, who tended to use more generic terms such as “adults”, “teenagers” and “men”. However, even some of the youngest children were able to generalise and, one Year 3 boy appeared to display metacognitive awareness across the four advertisements shown to his group, as his replies changed from “my dad would watch it” to “my dad, my dad, everyone in my family” to “Everyone” and finally to “Everyone. I’ve said it again!”.

### *Category related differences*

In addition to these age-related differences in explicit knowledge, noticeable differences were also found in a comparison of responses of the two advertisement categories, alcohol and non-alcohol. Children in all age groups talked with greater ease about the non-alcohol advertisements and used a far wider variety of adjectives or descriptive phrases, e.g. “silly”, “refreshing”, “exciting”, “makes me wanna laugh”, when discussing the appeal and content of these commercials and their own feelings. A comparison of the variety can be seen in Table 2.3 below.

**Table 2.3. Total number of different adjectives or adjectival phrases used by each age group about the advertisements, by category, or their feelings about them**

	Alcohol	Non-alcohol
Year 3 (n = 6)	8	15
Year 4 (n = 5)	10	12
Year 5 (n = 6)	12	16

Overall, 24 different adjectives or adjectival phrases were used for alcohol advertisements and 32 for non-alcohol ads. However, of the 24 descriptions

referring to alcohol advertising, five were negative and were only used by the Year 5 children, e.g. “rubbish”, “boring”, “not good”. The non-alcohol advertisements elicited only positive reactions. Whilst these findings are not statistically significant, the pattern suggested by the age and category related differences raise a number of issues which will be discussed in the conclusion.

### *Cognitive variability*

Cognitive variability is the recognition that children may have several ways of thinking about knowledge and concepts and that representational development is not a single linear process. Therefore when investigating children’s explicit opinions of alcohol advertising, we would expect children sometimes to produce more than one view of the subject. Indeed, multiple ways of thinking about television alcohol advertisements were evident in the children’s responses and, whilst this was the case for all age groups, it was particularly noticeable, and it would seem influential, for Year 5 children.

The Year 5 children seemed to perceive alcohol advertisements differently to the younger children in that they appeared to be starting to separate out the product from the advertisement and thinking about them separately. However this separation seemed to lead to a negative opinion of the advertisement as a whole. A clear example of the confusion that this can create in a study requiring verbal report is the Year 5 boy who says “I don’t really like adverts like that”, “No, I don’t really like it”, “That’s why I don’t like it” and “they wouldn’t choose to watch it” about one advertisement, but who contradicts himself by saying that he liked watching it and suggesting that it had “good humour”.

As already indicated, multiple ways of thinking about alcohol advertising were not restricted to Year 5 children. For example, having emphasised the adult nature of Bell’s whisky with comments such as “it’s for grown-ups, it’s sold in clubs” and it was “not for children because it’s a bit like alcohol”, all three Year 3 boys were positive that the advertisement made them think they would like to try it, with one boy remarking that it “makes me wanna drink it and makes me thirsty”. Equally,

one Year 4 girl, when asked if there was anything she disliked about the Bell's advertisement, said "only that I don't like whisky" suggesting that, like Year 5 children, she too is able to separate the product from the advertisement.

## **Summary and Conclusions**

The aim of this interview study was to discover what children, aged 7 to 10 years old, think about alcohol advertisements on television and what they are able to express verbally about them. Relying on explicit knowledge, the children's responses reflect one way in which younger children hold knowledge and are thus comparable to previous studies with older children. Another purpose behind this study was to establish the type of vocabulary children use in connection with advertising, and which can subsequently be employed in paradigms exploring implicit and pre-explicit knowledge.

In previous work in this area, children aged nine years old appear to have been the youngest to be interviewed about alcohol advertising (Aitken, Leather et al., 1988; Waiters et al., 2001; Wyllie et al., 1989; Wyllie et al., 1998). Results from these studies have indicated that whilst children of this age may find alcohol advertisements attractive, they find them less attractive than do 12 to 13 year old children. Children aged nine and ten often indicate a dislike of such advertising and fail to explicitly include alcohol advertisements in their lists of favourite advertisements. Conclusions drawn from such studies have led to suggestions that an increasing attraction to alcohol advertising over the next few years is due to the product becoming more salient with age (Aitken, Leather et al., 1988; Waiters et al., 2001). However, the findings from this interview study suggest instead that children as young as seven years old find televised alcohol advertisements attractive. It is therefore imperative that this age group is included in future studies concerning the influence of alcohol advertising.

The younger children in this study, around the ages of 7 and 8 years old, found television advertisements for alcoholic drinks appealing. They certainly appeared to enjoy the humour that is a feature of many such advertisements, but even non-

humorous advertisements were liked. However, determining the appeal of alcohol advertising to older children was less clear. Whilst they were adamant that they disliked the alcohol advertisements, evidence of cognitive variability in their responses to further questioning suggests these responses require further clarification.

None of the children appeared to recognise the subtlety of advertising, nor its ability to reach wide audiences, including themselves. The children felt that they could control what they watched and, whilst to a certain extent it may be true that they would choose not to attend to alcohol advertising, it was clear that this was not always what occurred as many of the children were familiar with the alcohol advertisements shown. In light of both their inability to identify the products being advertised, and the somewhat deceptive nature of some of the advertisements, this is not surprising. Indeed, the comment by one girl about a cartoon style advertisement suggests that children may perceive this style of advertising as directed towards them; could this also be case for some of the other alcohol commercials?

From a theoretical point of view, this study reinforces a number of issues raised in Chapter 1 about the inadequacy of using only interview data and basing interpretation on age-stage theories when exploring children's knowledge. Whilst age-related changes seemed to be apparent in children's explicit knowledge (with a move from discussions of the perceptual content of advertisements by the younger children to more conceptual issues by the older children), other findings in this study indicate that representational changes were taking place at an implicit or pre-explicit level which may be more related to the development of domain specific knowledge than to age-related differences.

The explicit dislike of alcohol advertising by the 9-10 year old children in this study is not dissimilar to other interview studies in this area where 9-10 year old children have been the youngest participants (Aitken, Leathar et al., 1988; Waiters et al., 2001; Wyllie et al., 1989). However, in contrast to previous suggestions that this is an age at which children are just starting to find alcohol advertising attractive, the very positive response by the younger children in this study suggests both interest at an earlier age and that changes in representational knowledge may be occurring over

time. The pattern of responses across the different age groups suggests the existence of a U-shaped learning curve in children's representations of alcohol advertising. Thus the youngest children find alcohol advertising attractive and represent it as advertising, as an encapsulated whole (e.g. LI in the Representational Redescription theory). As children's knowledge of alcohol and alcohol advertising develops and becomes more explicit to the mind then confusion appears to set in. Their developing and pre-explicit negative beliefs about the nature of alcohol appear to result in children's verbalised negative attitude towards the advertising, and their rejection of the advertisement in its entirety, rather than just the product. Could this parallel the U-shaped learning curve frequently found in developmental studies (Karmiloff Smith, 1992; Kuhn, 1995b; Siegler, 2004; Strauss & Stavy, 1982)? For example, in research into naïve science theories, as knowledge becomes more explicit after an initial display of behavioural mastery, children appear to experience difficulty and confusion in separating data and theory, which often results in the denial of contrary evidence (Karmiloff Smith, 1992; Pine & Messer, 1999). Thus, the explicit dislike of alcohol advertising expressed by the older children in this study together with the evidence of cognitive variability suggest that their response may be more related to cognitive changes in the way they represent alcohol and alcohol advertising than to a dislike of the advertisements themselves.

The category related findings are also suggestive of representational change. They raise the question of why these children are not applying the same wide vocabulary that they use for non-alcohol advertisements to the matched alcohol advertisements? Clearly, they have the requisite verbal skills. It may, indeed, be that they do not consider the alcohol advertisements as exciting and enjoyable as the non-alcohol ones but, again, an alternative possibility is that their representation of alcohol advertising is at an implicit or pre-explicit level, e.g. L1 or E1, whilst that of non-alcohol advertising is at a more explicit level, e.g. E3 or E4 (Karmiloff Smith, 1992). This could be as a result of greater familiarity with, and therefore more developed knowledge of, the products being advertised. If this is the case, then it would suggest that television alcohol advertising could be analogous to a micro-domain. Furthermore, the finding that children's knowledge is less explicit in this micro-domain confirms that, for a more appropriate investigation of children's understanding and response to television alcohol advertisements then an approach

which accesses multiple, alternative, ways of knowing (e.g. implicit, pre-explicit and explicit) is necessary.

By considering the findings in this study from a theoretical point of view then, it is clear that children's knowledge of alcohol advertising is far more complex than verbal report alone can reveal: an issue which has not been considered and remedied in previous alcohol advertising research. Cognitive variability in children's responses and the indication of a U shaped learning curve highlight the confusion revealed by reliance on verbal knowledge alone. The indicators of alcohol advertising as a micro-domain with children's knowledge at implicit or pre-explicit levels also confirm the need for an investigation that precludes the necessity for explicit knowledge. What would this reveal about children's views of alcohol advertising, and do older children really not like alcohol advertisements?

As a qualitative study, these interviews are revealing in what information they both can and cannot provide. However, with such a small sample size, whilst the initial findings may be indicative of these children's explicit perceptions and representations, can they be considered representative of children in general at this age? Therefore, a quantitative study with a far larger sample size, using measures which access implicit and pre-explicit knowledge and with vocabulary taken from the non-alcohol advertising responses given by children in this study, will explore the issues arising from these interviews, both theoretical and applied.



## Chapter 3

### **The appeal of alcohol advertising: implicit and pre-explicit knowledge**

As indicated in Chapter 1, studies that have explored children and young people's representations of alcohol advertising have frequently relied on verbal responses which require the explicit production of knowledge (Aitken, Eadie, Leather, McNeill, & Scott, 1988; Aitken, Leather et al., 1988; Waiters et al., 2001). Indeed, this was also the case in the interview study reported in Chapter 2. However, as described in Chapter 1, current developmental theories suggest that verbal knowledge may not be representative of the complexity of children's knowledge (e.g. Karmiloff Smith, 1992; Pine & Messer, 1999; Siegler, 1996). This was confirmed by the findings from the interviews, which were interesting in the information they provided, but perhaps more importantly, they were interesting in indicating that information provided by the children was inconsistent or incomplete. In this second study, therefore, the aim was to move away from verbal and explicit knowledge and to develop and use a methodology that accessed children's opinions of televised alcohol advertisements at a pre-explicit level, i.e. the study did not require the children to *produce* knowledge in the form of verbal responses.

Previous findings, from research which has relied on verbal response, have suggested that older children, i.e. around 12 years of age, find television advertisements for alcohol more attractive than do younger children of around 10 years old (Aitken, Leather et al., 1988; Waiters et al., 2001). Such studies have attributed the increasing interest in alcohol advertisements as a function of age to alcohol advertising becoming more salient as young people move through adolescence. However, the interview study, reported in Chapter 2, suggests that this may not be an accurate

reflection of the situation as, conversely, the appeal of alcohol advertisements appeared to decline with age. What, then, is the situation? In view of the theoretical issues covered in Chapter 1 an investigation of implicit and pre-explicit knowledge could provide a more accurate representation of children's perceptions and any differences in the popularity of alcohol commercials that have previously been attributed to age-related variables should be less pronounced (Karmiloff Smith, 1992; Reber, 1993).

One of the main aims of this study therefore was to develop a methodology which would tap into children's implicit and pre-explicit knowledge of alcohol advertisements. At the same time, and in common with the interview study, the quantitative study sought to:

- gather evidence on the appeal of alcohol advertisements;
- explore how this appeal compares with that for other non-child directed food and drink advertisements;
- establish whether children perceive such advertising as encouraging them to try the advertised product;
- identify who children think would enjoy watching alcohol advertisements.

The design of the study had to incorporate both methodological considerations and content that would meet the requirements of the information being sought. Before considering the task design however, a further issue needed to be addressed: that of the role of gender-related differences.

Whilst gender-related differences are not the prime issue in the overall thesis, they can nevertheless provide important information, both in terms of predicted behaviour and of statistical analysis. For example, a particular criticism of the alcohol studies to date is that they have tended to concentrate on beer advertising which children, and adults alike, perceive as being male oriented (Wyllie et al., 1989). Such was the difference in both product consumption and advertising recall in one study that data analysis was separated, post hoc, by both gender and type of alcohol (Connolly et al., 1994). In that study 68% males compared to 20% females reported that three quarters of their alcohol consumption was beer; likewise beer advertisements comprised 75% of the total advertising recalled by males at 15 years old compared to 39% for females. As eight out of eighteen studies in this area in the past ten years

have used *only* beer advertisements (see, for example, Waiters et al., 2001), any gender related differences indicated may be artefactual. Moreover, by concentrating on advertising that is more likely to appeal to men and boys such studies may underestimate the overall effects of alcohol advertising. Consequently the materials chosen for this study use an equal mix of beer and spirits advertisements, incorporating those alcoholic drinks which could be perceived as more female oriented, such as Bacardi Breezer and Archer's.

As already indicated, the task design needed to take into consideration current theories about domain specific knowledge development. As children have knowledge in different formats and at different levels of explicitness (Karmiloff Smith, 1992; Pine & Messer, 1999; Siegler, 1996), this study required a methodology suitable for children aged 7-10 years old, which would tap their implicit and pre-explicit knowledge. Previous tasks tapping implicit knowledge with adults and children include the Stroop task, degraded picture task, priming, word-stem completion and sentence completion (Anooshian, 1997; Kramer & Goldman, 2003; Reber, 1993; Wiers et al., 2002). However, some of these methods are more suitable than others for 7-10 year old children whose literacy skills may be inadequate for them to complete the task accurately. Therefore, for this study, a simple categorisation task in the form of a sorting paradigm was chosen.

A sorting paradigm presents children with simple alternative choices and a visual guide to these choices, thus removing the need for effortful processing and explicit production of knowledge. By keeping the number of choices available at a minimum (two or three in this study), task demands on the children are minimised, which improves accuracy and reliability (Roedder, Sternthal, & Calder, 1983). In order to engage the children's attention, and to allow children to view pre-recorded advertisements on screen prior to responding to questions about them, the task was presented via a computer programme. As in Study 1, previewing the advertisements removed the need for explicit recall of advertising previously seen on television and ensured that all children had an equal opportunity to respond.

## Method

### Participants

A total of 179 children took part in the study and comprised 77 boys and 102 girls. The children were in Years 3, 4 and 5 at two primary schools in Hertfordshire (98 from one school and 81 from the other). The youngest children participating were 7 years 8 months old whilst the oldest were 10 years 8 months old. The overall mean age was 9 years 2 months (SD = 9.88 months). However, as one of the prime theoretical reasons for this non-verbal study was to establish whether the appeal of advertisements increased with age, the children's responses will also be assessed as groups by school year. Accordingly, the breakdown is:

Year 3 (n = 57), mean age of 8 years 2 months (SD = 3.19 months);

Year 4 (n = 71), mean age of 9 years 2 months (SD = 3.22 months);

Year 5 (n = 51), mean age of 10 years 2 months (SD = 3.3 months).

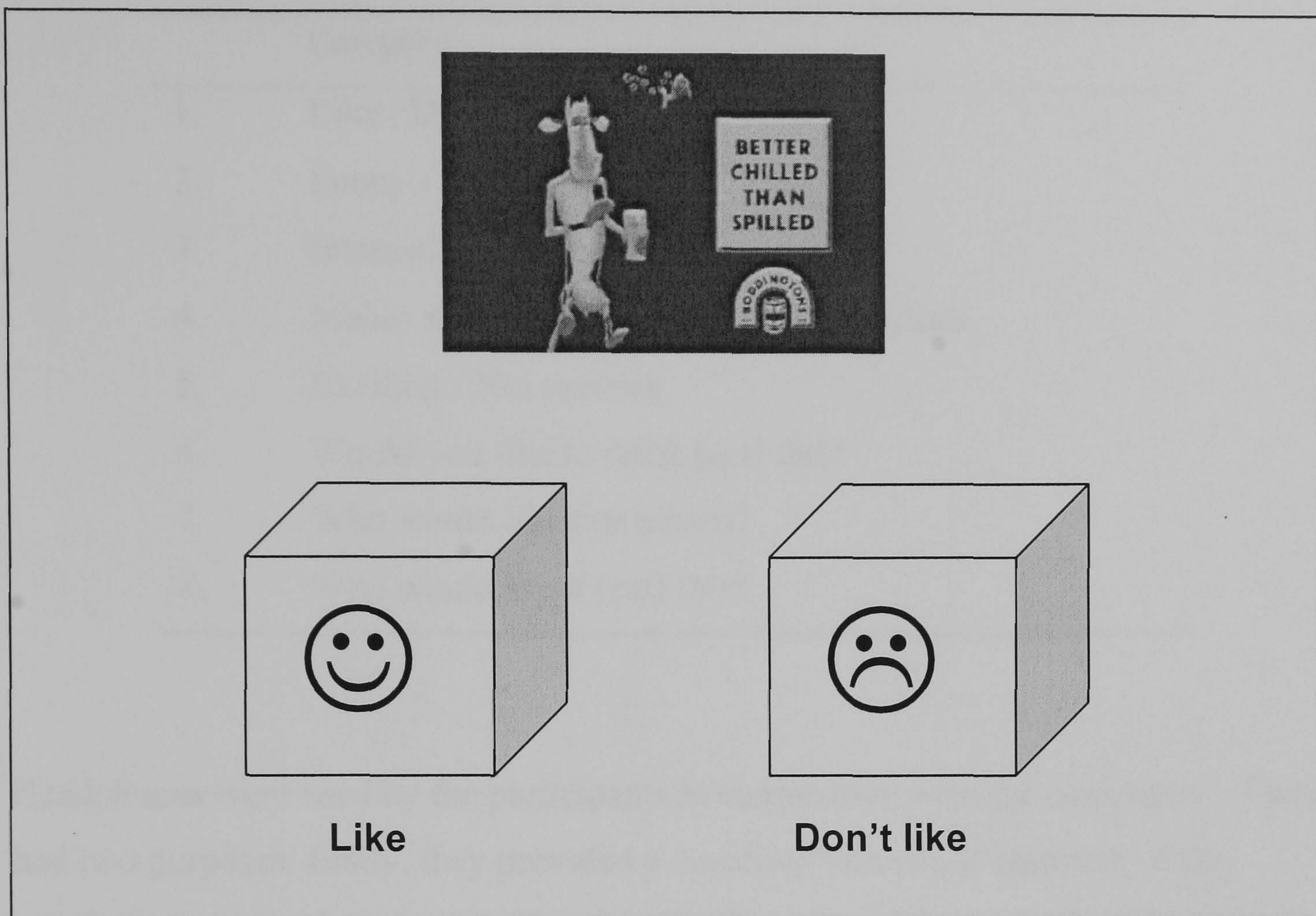
### Materials

The materials for the study comprised two main elements: firstly, the computer programme used for presentation of the advertisements and the sorting paradigm and, secondly, the advertisements themselves.

#### *Preparation and content of computer programme*

A computer programme was prepared, using Authorware, to enable children to watch a number of different advertisements on a laptop computer and then indicate their responses to each individual advertisement by 'sorting' them into boxes on the screen by using a mouse to click on the chosen box (see Figure 3.1). Each advertisement was shown in full and then followed immediately by 8 different sorting screen displays before the next advertisement was shown. Each of the eight sorting screen displays presented a different 'question' relating to the advertisement that had just been screened.

**Figure 3:1. Example of computer screen display from the sorting task**



As illustrated in Figure 3.1, the boxes were labelled with either a smiley or a non-smiley face for questions 1 to 6 (see Table 3.1) and with labels related to the category, e.g. written under the box with the smiley face was “funny” and under the box with the non-smiley face was “not funny”. For questions 7 and 8 the children could click on up to three boxes: each box represented an age group (children, teenagers or adults) and carried clipart depicting the group. One question was displayed per screen as in Figure 3.1 and incorporated a still displaying the product taken from the advertisement (see Figure 3.2). Data was gathered in response to the sorting categories indicated in Table 3.1. The terms used were based on children’s responses to non-alcohol advertisements in the interviews described in Chapter 1.

**Table 3.1 Sorting categories for advertisements**

Category
1. Like / Don't like
2. Funny / Not funny
3. Interesting / Boring
4. Makes me laugh / Doesn't make me laugh
5. Exciting / Not exciting
6. Would you like to drink (eat) this?
7. Who would like this advert?
8. Who would drink (eat) this?

Headphones were used by the participants in conjunction with the computers. These had two purposes: firstly, they provided a vocalised version, if required, of any words that appeared on the screen and, secondly, they reduced noise interference from different advertisements being shown at the same time on other computers in the classroom. Data were recorded automatically into an Excel file on to each computer ready for transfer to one main file for analysis in the SPSS programme.

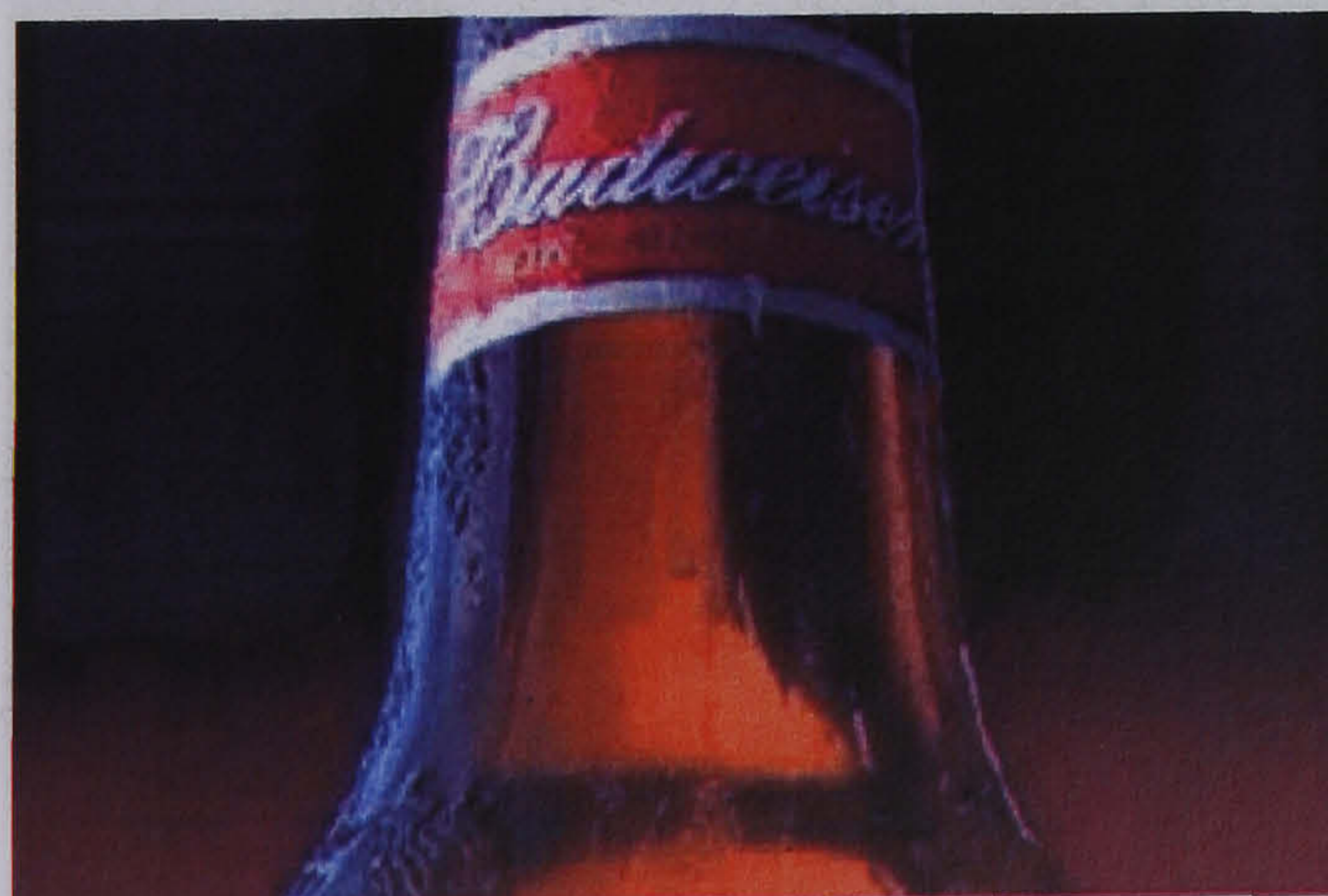
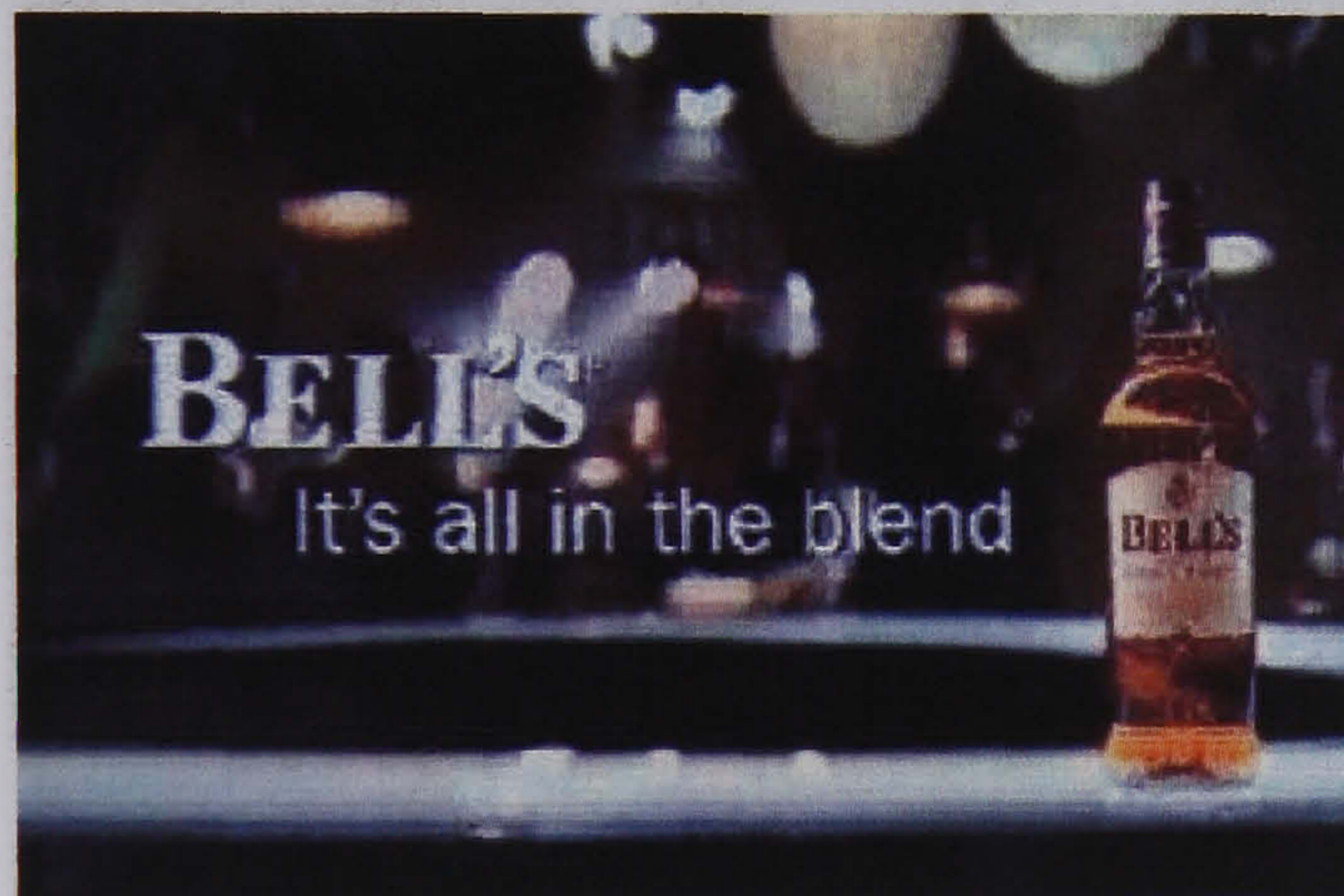
***Advertisements***

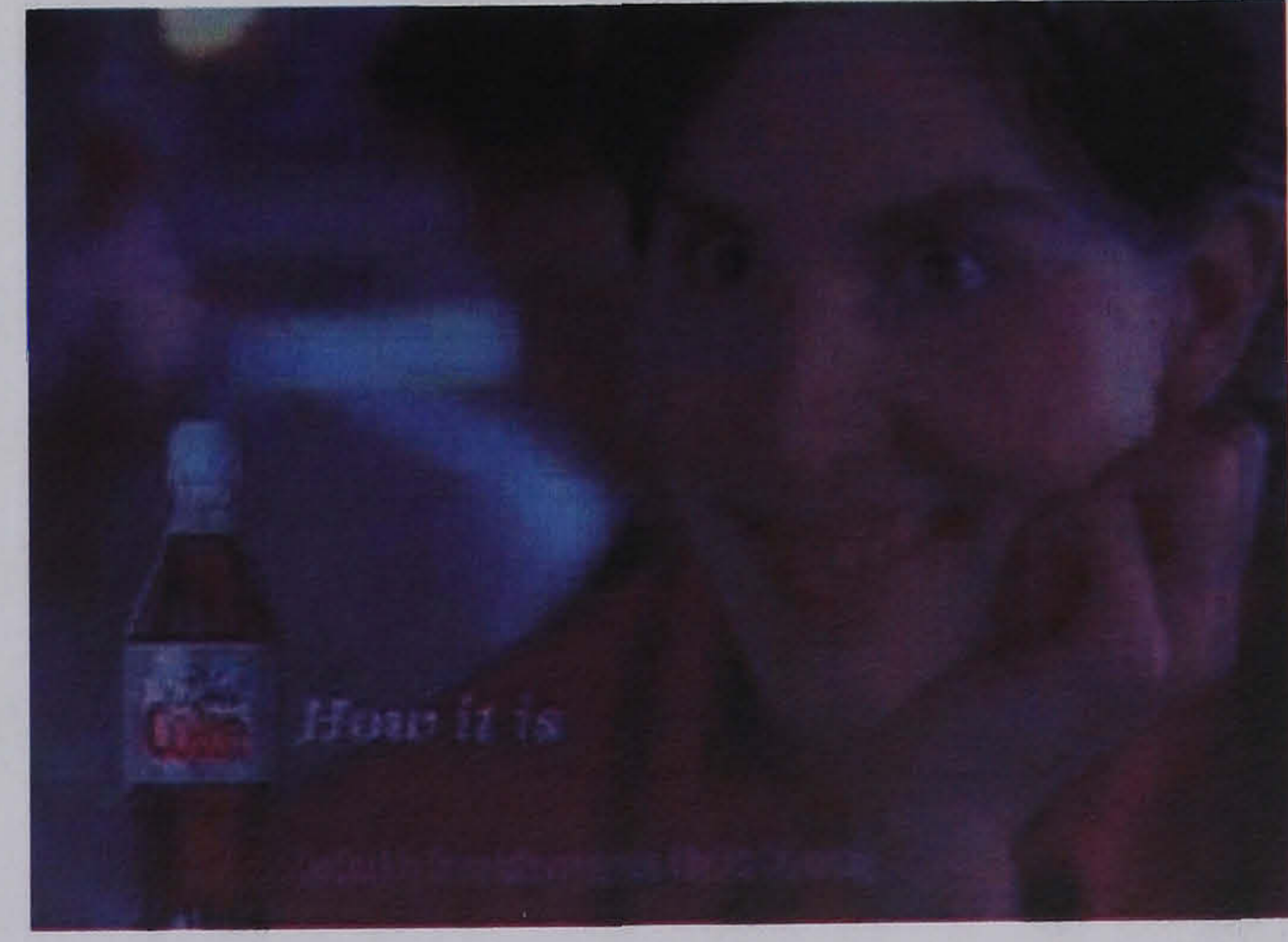
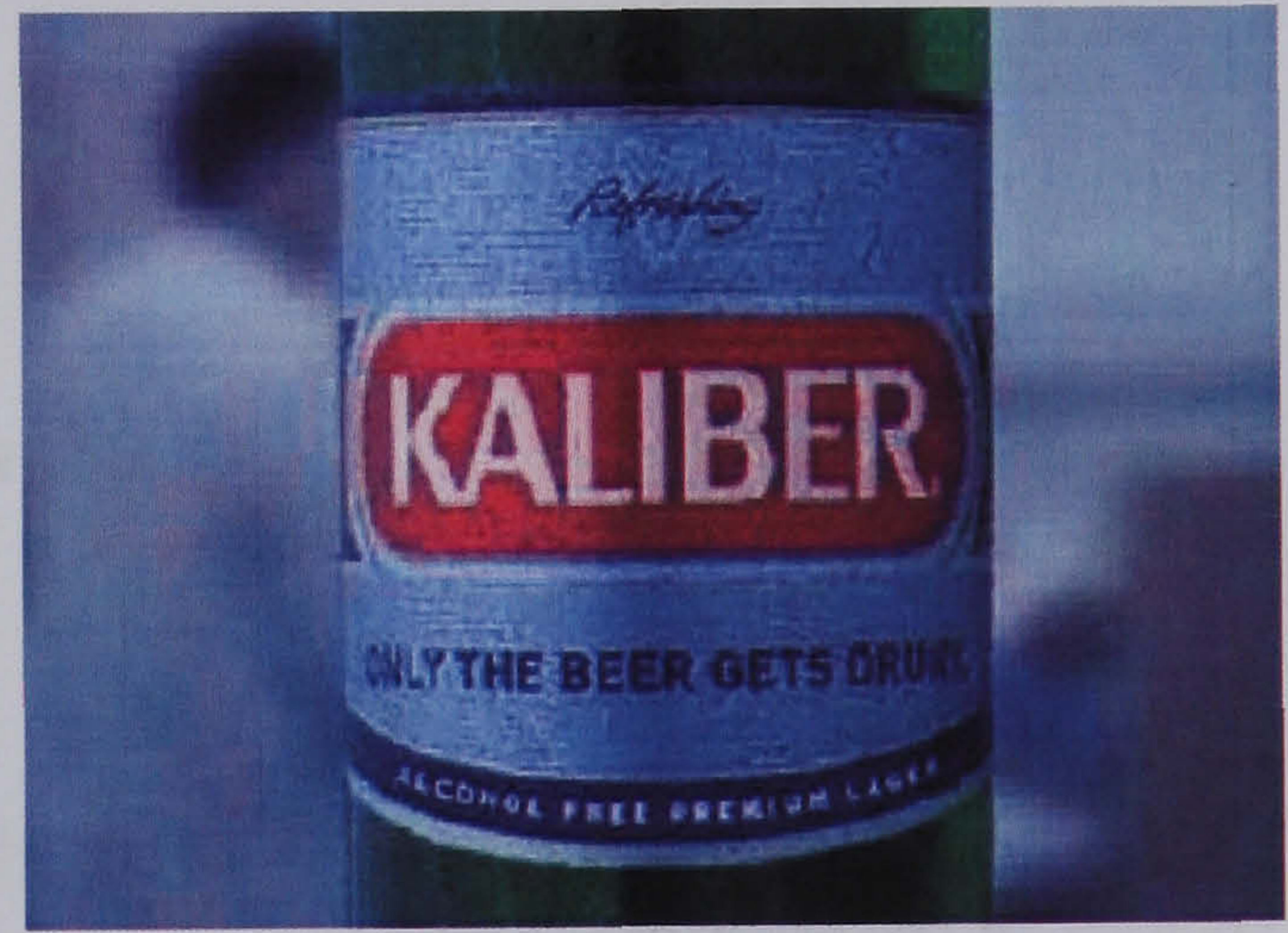
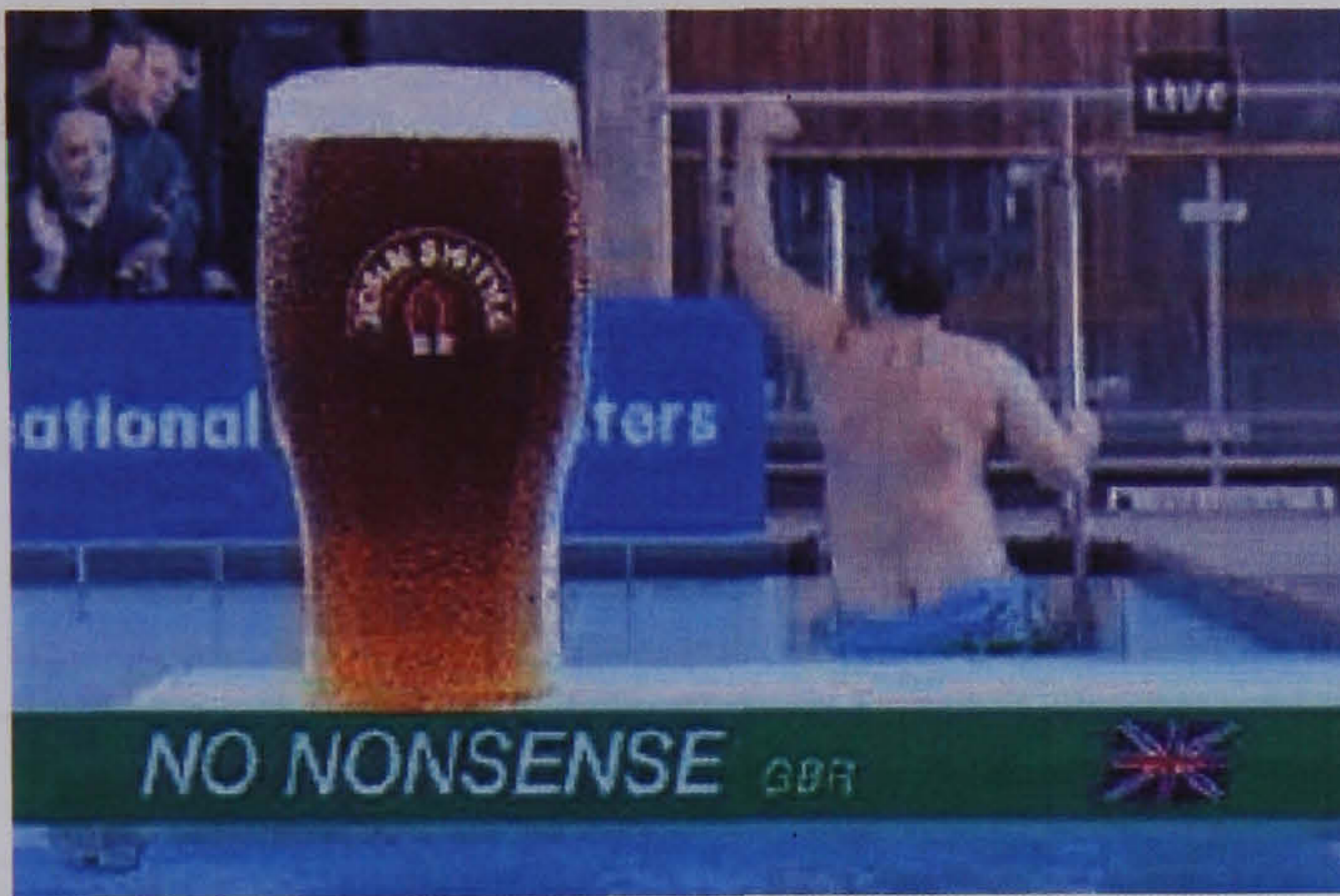
All 16 pre-recorded advertisements described in the materials section of Chapter 2, and in Appendix B, were used in this study and stills from the advertisements are illustrated below in Figure 3.2. For the computer programme the two groups of advertisements (eight alcohol and eight non-alcohol) were placed in random order within their group and then alternated with the other group, i.e. alcohol, non-alcohol, alcohol, non-alcohol, etc. The order of the advertisements was counterbalanced, to control for boredom and fatigue effects, by starting the programme on each of the four laptops at different points in the cycle.

Figure 3.2. Stills taken from the advertisements used in this study

Alcohol advertisements

Matched non-alcohol advertisements







## **Procedure**

Children worked individually on one of four laptop computers with headphones. Prior to carrying out the study the children were shown an example of each of the questions and its layout. A brief explanation was given as to what they needed to do: to simply watch the advertisements that were going to be shown on the computers and then respond to the questions using the mouse to click on the box into which they would sort that advertisement. In the case of the question “Would you like to eat/drink this?” the experimenter explained that she wanted to know whether they felt that the advertisement made them want to try the product, and that they were not to worry about what the product was. Each child entered their first name and completed a brief example of the questionnaire on the machine. They then proceeded with the study. If children felt that they had answered a question incorrectly during the study, and were unable to go back to that question, they told the investigator who noted the answer they wished to give in a log. The log was used to make the necessary corrections before the results were analysed.

## **Results**

The results are presented in four sections: the first section explores the attitude to advertisement scores for the cohort as a whole (i.e. 7-10 year old children), for responses to both alcohol and non-alcohol ads, and for age and gender effects. The second section examines responses to individual advertisements, for both alcohol and non-alcohol advertisements. The third section refers to alcohol commercials only and to children’s perceptions of who would like the advertisement and who would consume the advertised product. Finally, the fourth section considers the issue of gender related differences at individual advertisement level for alcohol advertising only.

### **Positive attitude to advertisement scores (alcohol and non-alcohol commercials)**

Summing the number of positive responses to the first five sorting questions (like, funny, interesting, makes me laugh and exciting) for each advertisement created a positive attitude to advertisement score (PATTAD) per child. Internal consistency estimates of reliability for this scale, computed using data from the first 50 children, gave a coefficient alpha of .92. There was no significant effect of counterbalancing the order of the advertisements, therefore ‘order’ was removed from subsequent analyses. Pearson correlation coefficients between the first five questions were all positive and significant at  $p < .001$ , and ranged from .52 to .82.

This positive attitude to advertisement (PATTAD) score was used to calculate mean positive scores for the two categories of advertisement, alcohol and non-alcohol. Whilst three outliers were identified in the means of the alcohol advertisements and one in the non-alcohol advertisement means, they were not removed as these children had normal scores in the alternative category. The means were explored overall, by year group and by gender. With a maximum possible score per advertisement of 5 and a total of 8 advertisements in each category, the total possible score per category was 40. Mean PATTAD scores for each category are given in Table 3.2 below.

**Table 3.2 Mean positive attitude to advertisement scores by sample, year group and gender**

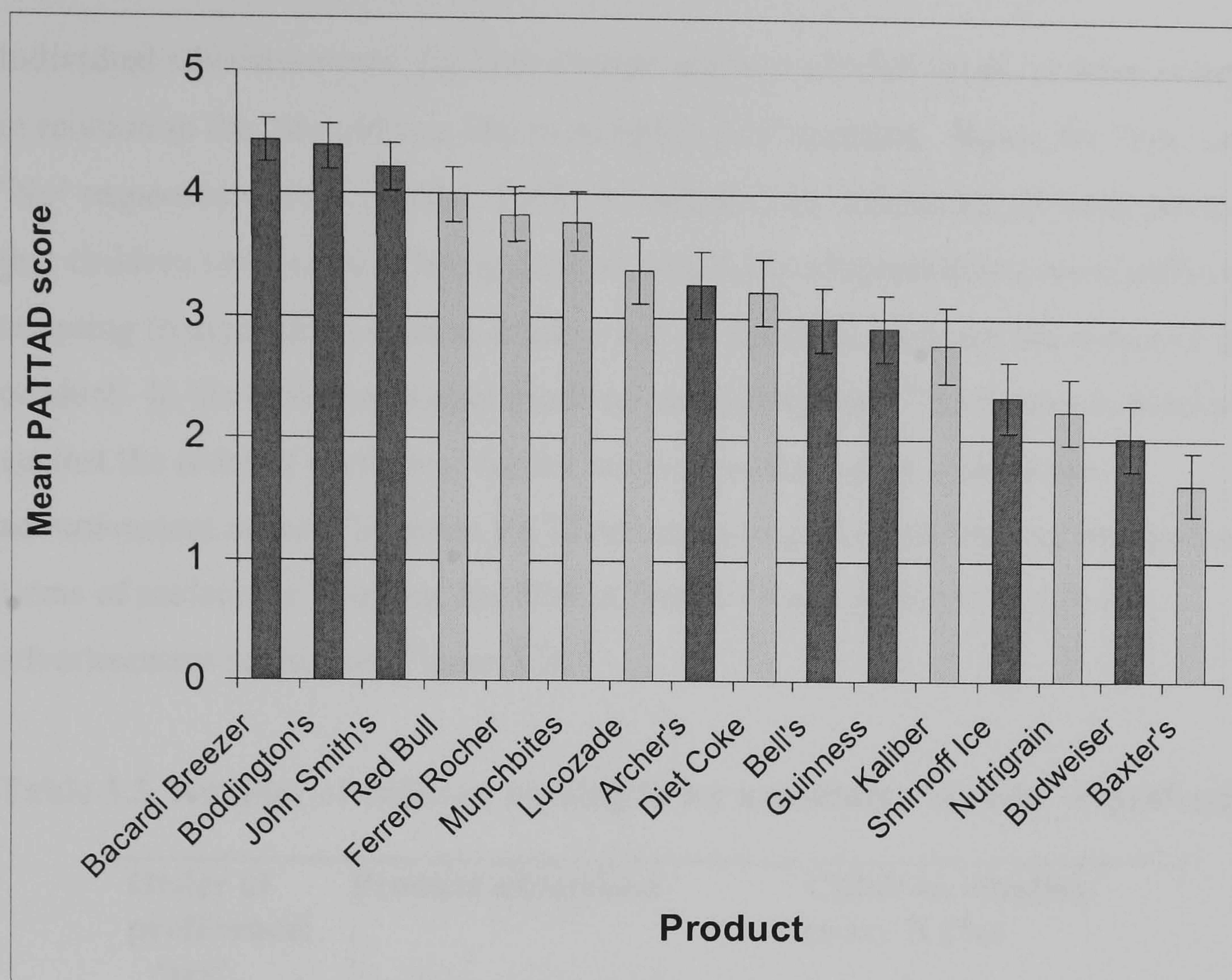
	<b>Alcohol advertisements</b>	<b>Non-alcohol advertisements</b>
	<b>Mean score (SD)</b>	<b>Mean score (SD)</b>
<b>Sample (n =179)</b>	26.57 (7.72)	24.86 (8.5)
<b>Y3 (n=57)</b>	27.91 (7.57)	25.81 (8.76)
<b>Y4 (n=71)</b>	25.15 (8.69)	23.39 (8.12)
<b>Y5 (n=51)</b>	27.00 (6.96)	25.84 (8.62)
<b>Boys (n=77)</b>	28.31 (8.13)	25.58 (8.52)
<b>Girls (n=102)</b>	25.25 (7.54)	24.31 (8.49)

In a mixed design ANOVA with the mean positive attitude to advertisement score as the dependent variable, the repeated measures were the advertisement type, i.e. alcohol or non-alcohol, and the between subjects factors were year group and gender. There was a significant main effect of advertisement type, Wilk's Lambda = .928,  $F(1, 173) = 13.42$ ,  $p < .001$ , multivariate partial  $\eta^2 = .07$ . However there was no significant main effect of year group or gender, nor was there a significant interaction between year group and type,  $p > .05$ , n.s., although the interaction between type and gender was approaching significance, Wilk's Lambda = .98,  $F(1,173) = 3.48$ ,  $p = .06$ . Thus it seems that children aged 7-10 years old found the advertisements for alcoholic drinks to be more attractive than advertisements for non-alcoholic products. Equally, there was a tendency for boys, rather than girls, to prefer them. Moreover, the lack of interaction between type and year group suggests that children of all ages in the study found the alcohol advertisements attractive.

### **The popularity of individual advertisements (alcohol and non-alcohol advertisements)**

In order to assess the individual popularity of each advertisement, mean PATTAD scores were calculated for individual advertisements and these are shown, in order of popularity, in Figure 3.3.

**Figure 3.3. Mean PATTAD scores by individual advertisement**



- Alcohol advertisement
- Non-alcohol advertisement

Note: Bars represent 95% confidence intervals

A repeated-measures ANOVA confirmed that the mean PATTAD scores for individual advertisements were significantly different, Wilk's Lambda = .240,  $F(15, 164) = 34.66$ ,  $p < .001$ , partial  $\eta^2 = .76$ . To control for Type 1 error, the significance level for post-hoc comparisons was set at  $p < .001$  and paired t-tests indicated that in many cases the scores differed significantly at this level. Significant and non-significant differences are indicated in Appendix C.

Whilst three alcohol advertisements were the most popular, it was noticeable that the most well-liked non-alcohol advertisements were their matched commercials, suggesting that style was an important factor. The least popular advertisements were the product quality commercials and this is particularly noticeable for the Baxter's commercial with a mean positive response score which differed significantly to those of all other advertisements.

## Would you like to eat/drink this? (alcohol and non-alcohol advertisements)

Individual advertisements, for both alcohol and non-alcohol products were examined in relation to the “Would you like to eat/drink this” question. Boxes for ‘Yes’ and ‘No’ responses were available. Table 3:3 below is an ordered list of those products that children nominated as being ones for which the advertisements were sufficiently tempting to make them want to drink or eat the product, whatever the nature of the product. In the table the alcohol products are highlighted. The figures in brackets against the order of preference for the alcohol products only refer to the advertisement ranking by mean PATTAD score (e.g. Bacardi Breezer was sixth in terms of preference of trying, but first in order of mean positive attitude to advertisement scores, see Figure 3.3).

**Table 3.3 Number of children wishing to try a product - in order of preference**

Order of preference: ‘try’	Product advertised	Children wanting to try N (%)
1	Munchbites	155 (87%)
2	Diet Coke	147 (82%)
3	Lucozade	144 (80%)
4	Ferrero Rocher	140 (78%)
5	Nutrigrain	108 (60%)
<b>6 (1)</b>	<b>Bacardi Breezer</b>	<b>99 (55%)</b>
7	Red Bull	93 (52%)
8	Baxter’s	87 (49%)
<b>9 (3)</b>	<b>John Smith’s</b>	<b>79 (44%)</b>
<b>10 (2)</b>	<b>Boddington’s</b>	<b>72 (40%)</b>
<b>11 (8)</b>	<b>Archer’s</b>	<b>69 (38%)</b>
<b>12 (15)</b>	<b>Budweiser</b>	<b>65 (36%)</b>
<b>13 (13)</b>	<b>Smirnoff</b>	<b>64 (36%)</b>
<b>14 (11)</b>	<b>Guinness</b>	<b>58 (32%)</b>
15	Kaliber	49 (27%)
<b>16 (10)</b>	<b>Bells</b>	<b>47 (26%)</b>

Note: Bold type denotes alcohol products

Although the first five items on this list of products that children would like to try are for non-alcohol items, an examination of this table and Figure 3.3 (individual advertisement PATTAD mean scores) reveals that the advertisements for the first three alcohol items which appear as the most tempting in this list were also the most highly rated of the alcohol advertisements: Bacardi Breezer, John Smith's and Boddington's. It is worth noting, however, that whilst Baxter's was the least appreciated advertisement it was, nonetheless, a product that nearly half of the children would like to consume.

In response to the positive and negative options for "Would you like to drink/eat this?" the mean number of positive options chosen was 3.09 (SD = 2.74) for alcohol commercials, whilst for non-alcohol commercials this figure was 5.16 (SD = 1.92). Means by advertisement type (alcohol, non-alcohol) were also calculated by year group and these can be found in Table 3.4 below.

**Table 3.4. Mean number of positive choices in response to question "Would you like to eat/drink this?" by age group**

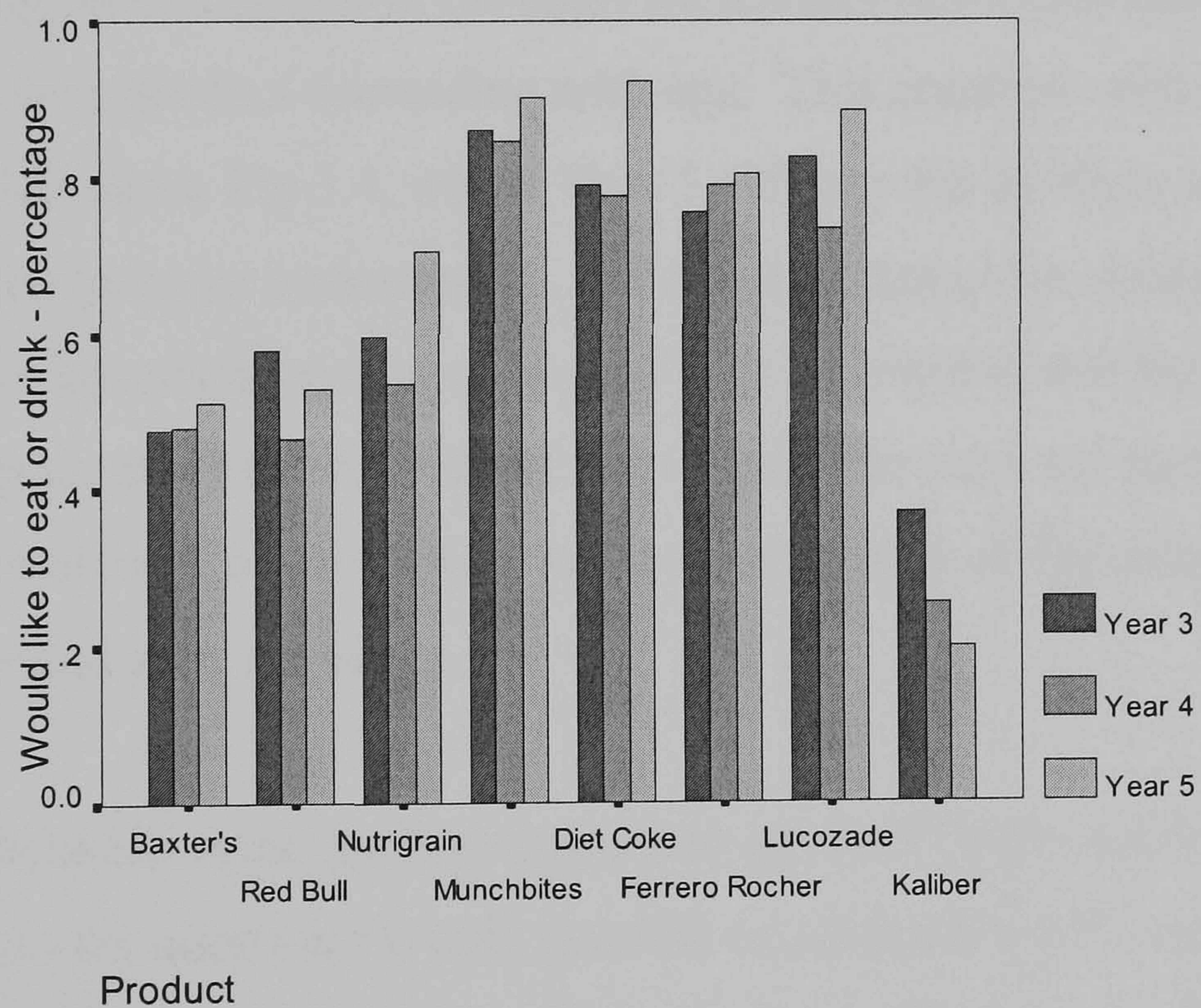
Year	Would like to eat or drink Mean number of positive choices	
	Alcohol commercials	Non-alcohol commercials
Year 3	3.79 (2.83)	5.25 (2.07)
Year 4	3.08 (2.64)	4.87 (1.95)
Year 5	2.31 (2.63)	5.45 (1.74)

In a mixed design ANOVA with the mean number of positive responses to this question as the dependent variable, the repeated measures were the advertisement type (alcohol and non-alcohol) and the between subjects factor was year group. There was a significant main effect of advertisement type, Wilk's Lambda = .564,  $F(1, 176) = 136.1$ ,  $p < .001$ , multivariate partial  $\eta^2 = .44$ . This suggests that children may be less tempted to try the alcoholic products advertised than the non-alcoholic ones. Whilst there was no significant main effect of year, the interaction between year and advertisement type was reliable,  $F(2, 176) = 7.29$ ,  $p < .001$ , partial  $\eta^2 = .07$ . Two further between-subjects analyses assessed the effects of year on each of the two categories of advertisement type. In a one way analysis of variance the year

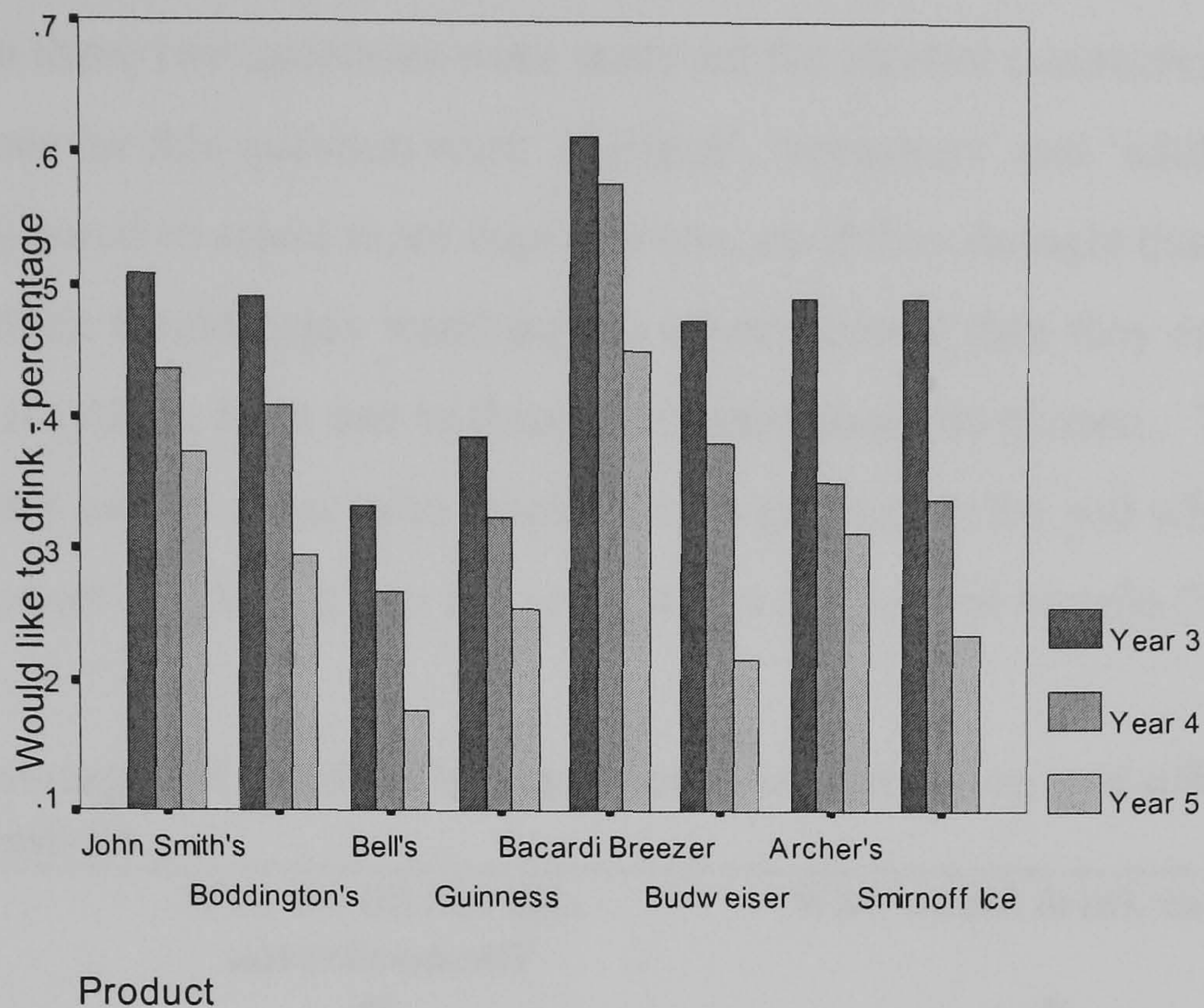
group differences for alcohol commercials were found to be significant,  $F(2, 176) = 10.04, p < .001$ . Post hoc analyses indicated that reliable differences were found between Year 3 and Year 5 only,  $LSD = 1.47, p < .05$ . It would seem that the oldest children in the sample were less tempted by the alcohol commercials than the youngest children. For non-alcohol products no significant differences by year group were found in mean positive response.

The graphical presentation of this data in Figures 3.4 and 3.5 for individual advertisement by product type and age group clearly illustrate where differences are found.

**Figure 3.4. Percentage of children by year group giving a positive response to the question “Would you like to eat/drink this?”: Non-alcohol commercials**



**Figure 3.5. Percentage of children by year group giving a positive response to the question “Would you like to eat/drink this?”: Alcohol commercials**



A distinct recurring pattern occurs in the chart for alcohol advertisements, Fig 3.5, with the desire to try a product decreasing with age. This contrasts with the non-alcohol commercials chart, Fig 3.4, where Year 5 children are as likely to want to try the products as their younger counterparts, and suggests that older children's response to alcohol advertisements was qualitatively different in that they appear to be less tempted by them. The only non-alcohol product to have the same pattern was Kaliber, a non-alcoholic beer, which may be a reflection of the children's inability to understand such a concept.

The relationship between mean positive attitude to ad (PATTAD) and the mean positive response to the question “Would you like to eat/drink this?” was explored by category using the Pearson correlation coefficient. For both alcohol and non-alcohol categories the relationship was positive and reliable: for alcohol products  $r = .440$ ,  $n=179$ ,  $p < .01$  and for non-alcohol products  $r = .418$ ,  $n=179$ ,  $p < .01$ . As the children were instructed to say whether the advertisement made them think that they would like to try the product, whatever it was, this suggests that they perceive advertising as encouraging them to try the product.



**Responses to “Who would like this advertisement?” and “Who would drink/eat this?” (alcohol advertisements only)**

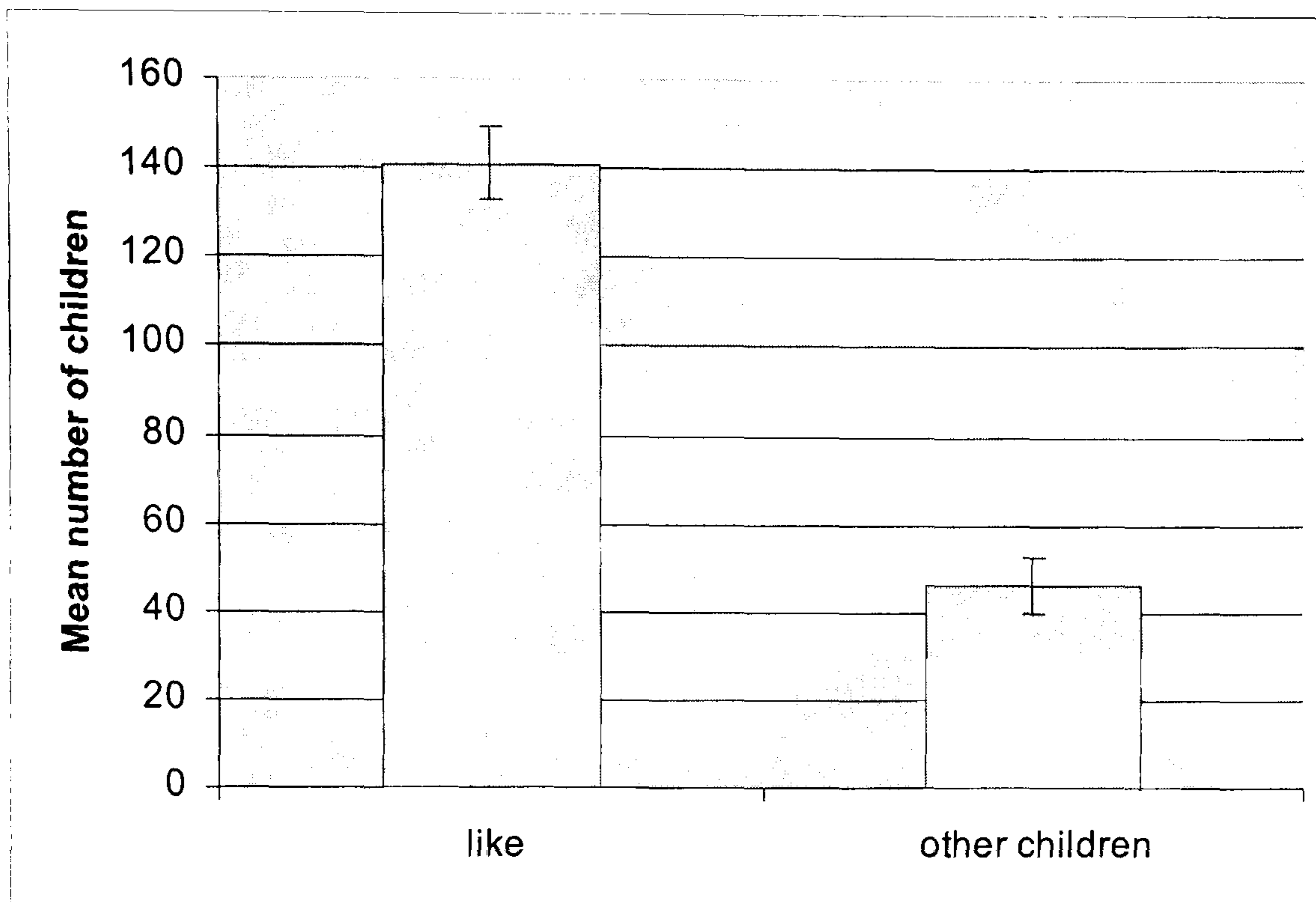
The responses to these two questions were analysed for alcohol commercials only. Possible responses for this question were ‘children’, ‘teenagers’ and ‘adults’. Children were allowed to select more than one box, so if they thought that both teenagers and adults would enjoy watching the advertisement then they could click on both boxes. Anything from one to three categories could be chosen.. Table 3.5 presents children’s beliefs about who would like an advertisement and who would consume the product. Figures given are percentages of the total sample (N = 179).

**Table 3.5 Percentages of children’s responses to others liking and others consuming questions**

	Who would like this advertisement?			Who would drink/eat this?		
	Children	Teenagers	Adults	Children	Teenagers	Adults
John Smith’s	38	68	84	14	59	91
Boddington’s	38	64	78	12	61	92
Bell’s	23	58	88	7	11	92
Guinness	16	62	88	9	54	91
Bacardi Br	37	71	84	18	70	88
Budweiser	18	61	87	16	65	91
Archer’s	18	70	86	14	66	91
Smirnoff Ice	17	62	85	12	63	89

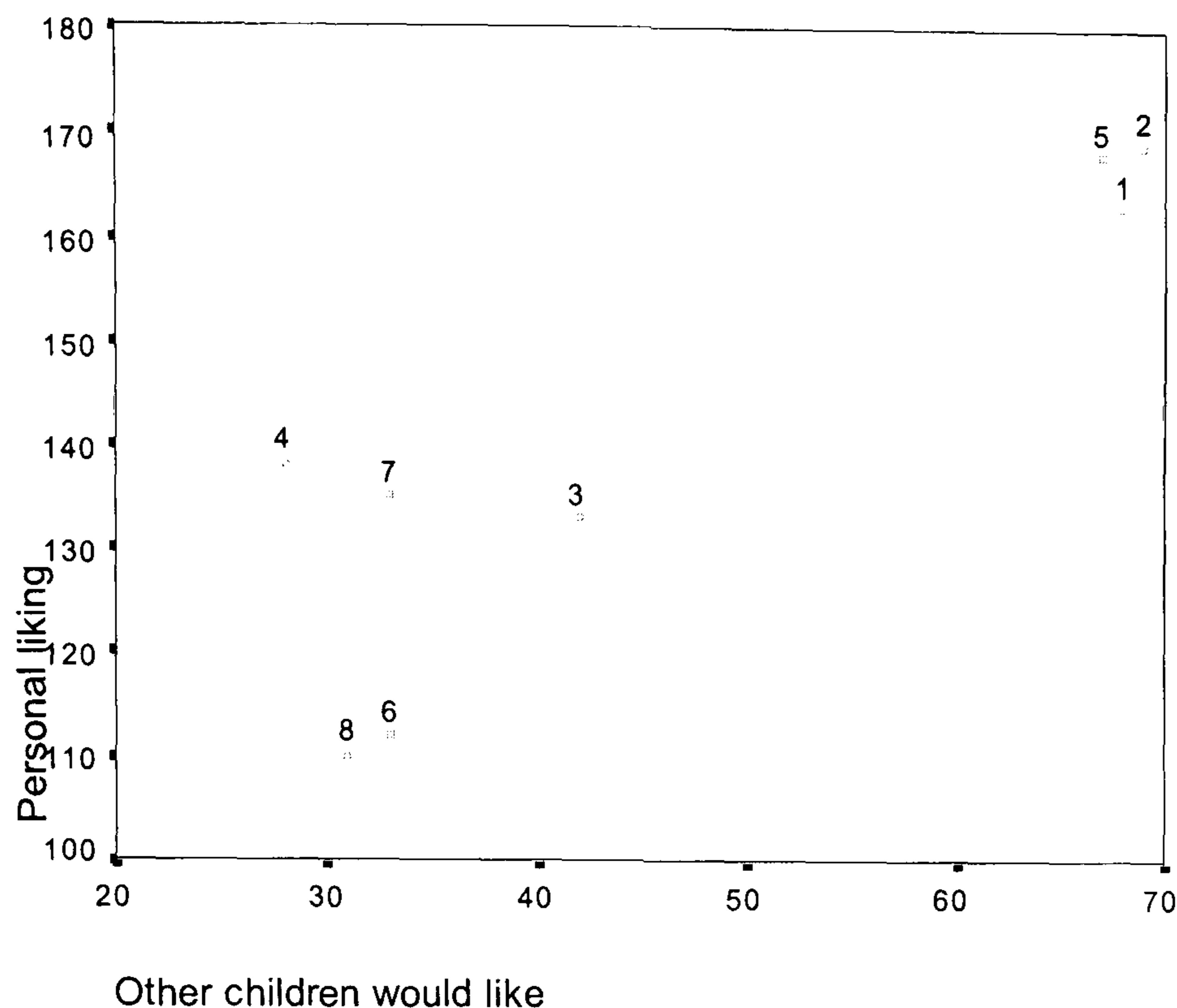
Children appeared to equate liking with personal relevance as there were clear patterns suggesting that children perceive that only those who would drink the product would like the advertisement. At an advertisement level, the relationship between those would like and those who would consume was analysed with total numbers of children per cell. This relationship was found to be strong and reliable using a Spearman correlation coefficient,  $r = .916$ ,  $n = 24$ ,  $p < .000$ . Thus it would seem from their responses that children believe that adults and teenagers would find the alcohol advertisements attractive, but doubt that other children would like them. However, this contradicts their own responses about liking, as the children in this study clearly liked the alcohol commercials as Figure 3.6 below indicates.

**Figure 3.6. Alcohol advertisements only: Mean number of children liking alcohol advertisements (averaged across the eight alcohol advertisements) and the mean number of children saying that ‘other children’ would like the advertisements**



In a paired t-test this difference was significant,  $t(7) = 24.12, p < .001$ . This would suggest that children’s own rating of alcohol advertisements is higher than they believe other children’s ratings would be. This was explored further at advertisement level. A correlational analysis was carried out between the number of children personally ‘liking’ an advertisement and the number of children indicating that other ‘children would like to watch’ across all eight alcohol advertisements. This produced a Spearman correlation coefficient approaching significance,  $r = .695, n = 8, p = .056$ , suggesting that there may be a relationship between the two. However, inspection of a scatterplot of this data (see Figure 3.7) indicated that three advertisements account for this relationship: John Smith’s, Boddington’s and Bacardi Breezer (points 1, 2 and 5 on the chart). Removal of the data for these three advertisements resulted in a non-significant negative correlation.

**Figure 3.7. Relationship between personal liking and other children being thought to like specific alcohol advertisements (number of children)**



- 1 John Smith's
- 2 Boddington's
- 5 Bacardi Breezer

Children were found to respond more positively about these three specific alcohol advertisements than any others. With the exception of the Bell's advertisement, children were 2-3 times more likely to say that the John Smith's, Boddington's and the Bacardi Breezer advertisements would be liked by other children than the other four advertisements.

The results of these correlational analyses and the mean PATTAD scores by advertisement, reported earlier, suggest that the style of an advertisement influences its appeal. It was therefore decided to re-analyse the general appeal of alcohol advertisements in relation to non-alcohol ads whilst controlling for style. Data for the three identified alcohol advertisements (Boddingtons, John Smith's and Bacardi Breezer) and their matched non-alcohol advertisements (Red Bull, Ferrero Rocher and Munchbites) were therefore removed before re-analysing the findings to assess whether children still found the remaining alcohol advertisements more attractive than non-alcohol advertisements. The revised mean positive attitude to advertisement scores were  $M = 13.53$  ( $SD = 6.33$ ) for alcohol advertisements and  $M = 13.23$  ( $SD = 6.12$ ) for non-alcohol advertisements. In a one way repeated

measures ANOVA, there were no significant differences for advertisement type, year or gender, with probability set at .05, n.s. Whilst the previous preference for alcohol advertisements was diminished, children nonetheless found them equally as attractive as non alcohol advertisements.

Two advertisements (4 and 7 in Figure 3.7) appeared to be popular with children at an individual level, but were not perceived as necessarily being attractive to other children. These advertisements were for Guinness and Archer's respectively. This difference may be due to children perceiving the content as strongly gender oriented, i.e. the Guinness advertisement was centred round a hurling match (see Appendix B), featured men and was perhaps perceived as more likely to appeal to boys rather than girls. Similarly the Archer's advertisement could be perceived as more likely to appeal to girls than boys. Further gender related differences are reported in the following section.

### **Gender-related differences by individual advertisement (alcohol advertisements only)**

At individual advertisement level the following mean PATTAD scores by gender were calculated.

**Table 3.6 Mean individual advertisement PATTAD scores by gender (alcohol only)**

	boys n = 77		girls n = 102	
	Mean	SD	Mean	SD
John Smith's	4.53	1.01	3.98	1.47
Boddington's	4.56	1.23	4.26	1.33
Bell's	2.75	1.74	3.16	1.84
Guinness	3.38	1.61	2.55	1.92
Bacardi Breezer	4.56	1.08	4.33	1.30
Budweiser	2.54	1.87	1.62	1.79
Archer's	3.28	1.94	3.25	1.71
Smirnoff Ice	2.7	2.01	2.08	1.95

Between groups analyses of variance for gender found significant differences for John Smith's ( $F(1,177) = 8.02, p < .01$ ), Guinness ( $F(1,177) = 9.34, p < .01$ ), Budweiser ( $F(1,177) = 11.15, p < .01$ ) and Smirnoff Ice ( $F(1,177) = 4.35, p < .05$ ). This suggests that, with the exception of the cartoon Boddington's advertisement, the beer advertisements are, as predicted, more popular with boys than with girls. The Smirnoff Ice advertisement may be more attractive to boys as the main character is a self-assured young man.

## Discussion

This study aimed to explore the implicit and pre-explicit responses of children aged 7 to 10 years to alcohol advertisements on television and sought to provide an alternative, and complementary, view to that obtained from explicit knowledge in previous interview studies, including that reported in Chapter 2. In addition, the study allowed for age and gender-related differences to be analysed and for comparisons to be made between responses to alcohol and non-alcohol advertisements. It was predicted that access to implicit representations would reveal less, if any, age related differences in terms of the appeal of alcohol advertisements. This discussion considers the appeal of alcohol advertisements in relation to age and gender related issues, advertising styles, their effectiveness and who children perceive as target audiences. Understanding children's thinking in this area is considered in relation to the theoretical background of the measures used.

The main findings of the study are that television alcohol advertisements are very popular with children and in some instances, are more popular than non-alcohol advertisements. Moreover, this finding does not differ by age: all age groups in this study were equally enthusiastic about the alcohol advertisements.

As suggested in Chapter 2, it would appear that what children are telling us in, say, an interview situation is not necessarily representative of the complexity of their thinking. Whilst the older children in the interview study claimed not to like the

alcohol advertisements, this study, seeking the same information but using a methodology that tapped into implicit and pre-explicit knowledge, produced quite different results. The finding that 9 to 10 year olds find alcohol advertisements very appealing contrasts not only with the interviews described in Chapter 2, but also with previous findings in other studies tapping explicit knowledge. Evidence from both this study and the interview study suggest that the development of domain specific knowledge of alcohol may be influencing children's explicit opinions about the attractiveness of the advertisements in the interview study. In other words, they report disliking an advertisement if it is advertising something they perceive as 'bad', even though they may actually enjoy watching the advertisement. These findings indicate that it would be prudent, in future research related to alcohol advertising and young people, to employ measures which tap both explicit and implicit knowledge and to include children as young as seven.

Whilst initially it appeared that alcohol advertisements were equally popular as advertisements for non-alcohol products, a comparison suggested that this may be related to particular styles of advertising. Certainly children appeared not to find product quality style advertisements attractive: these were the least popular for both alcohol and non-alcohol products. Equally, the most popular advertisements for both types of product were those that employed similar styles. The fact that the most popular alcohol and non-alcohol advertisements were matched for style and features suggest that it is these elements, rather than the content of the advertisement (i.e. the product), that prove to be the attraction for children. This suggests that there may be something about advertisement production styles that suggests to children that these advertisements are seeking their attention or trying to appeal to them.

Research Business (Research, 1988) cite humour, cartoons, animals and music as the four most popular advertisement treatments, regardless of audience age and these featured in the six most popular advertisements in the study. The advertisements for Bacardi Breezer, Boddington's, John Smith's, Red Bull, Ferrero Rocher and Munchbites all featured one or more of the following: humour, (especially simple, visual humour), a cartoon format, music and animals or character dolls. The two most popular advertisements each employed three of these treatments: Bacardi Breezer employed humour, animals and music, and Boddington's used humour,

cartoon and animals. Certainly, in this study, it appears that the treatments seemed to attract and appeal to children and, as such, are worth closer consideration.

Many of the alcohol advertisements featured humour and this was appreciated by the children. Nonetheless, it appeared to be the simple, visual humour such as that found in the John Smith's and Ferrero Rocher commercials that particularly appealed to them. In alcohol advertising the use of humour is pervasive and, whilst this study included two product quality, non-humorous advertisements for alcoholic drinks (Bell's and Budweiser), such advertisements are the exception. Research suggests that the most popular and effective advertisements employ humour as it appears to attract attention, increase liking and aid recall (Sippitt & Fowler, 1999). However, the use of humour to attract children depends on its nature and on whether they comprehend the joke (Messenger Davies, 1989). For example, in contrast to the somewhat 'slapstick' nature of the two aforementioned advertisements, the more sophisticated humour in the Smirnoff Black Ice advertisement was less appealing to children, perhaps because it depended on the viewer being knowledgeable about air travel and economy tickets. Therefore a reduction in specific types of humour, but not necessarily others, may result in making television alcohol advertisements less attractive to children, but still offer manufacturers and advertisers a way of marketing their products to an adult audience.

The use of a cartoon format for the Boddington's and the Red Bull advertisement was very effective in attracting children's attention and appealing to them. For alcohol advertising, this format is surely questionable in that the majority of cartoons that children see are aimed at their age group, therefore it is likely that they will perceive advertisements in that format as directed at them. Indeed, the comment about the Boddington's advertisement in the interview study of "We like cartoons more because, cos ... it's, like, boring if it's grown up" lends this support. Moreover the exclusion of this particular beer advertisement from the gender related differences, which are discussed later, suggest that it had particularly wide appeal, with girls also appreciating it despite it being a beer advertisement.

In addition to humour and cartoons, it appeared that the inclusion of an animal, such as the dancing cat in the Bacardi Breezer advertisement, increased the popularity of

the commercial with the children in this study. In view of a lack of an animal in a food or drink advertisement, the alternative of a male action doll clearly attracted children too. Indeed, advertisements incorporating characters or animals prove popular in general: for example, the animatronics used in earlier Budweiser advertisements were clearly popular with the young people taking part in the Waiters et al. (2001) study. Moreover, research suggests that the use of a visual retrieval cue improves product recall and children's brand evaluations (Macklin, 1994).

To return briefly to the least attractive advertisements, those which emphasised product quality, it was interesting to note that the only product quality advertisement that was appreciated by children was that for Bell's whisky. Here, perhaps, was a good example of how children find music attractive in advertising: this was for a drink that children clearly perceived as being for adults, as shown in their response to who would like to drink it (Table 3:5), and yet they enjoyed the advertisement and found it entertaining. As a result, whilst it was a product quality commercial it did not rank alongside the other product quality commercials in terms of appeal. Equally, whilst they enjoyed watching it, there appeared not to be a perception that it was encouraging them to drink, perhaps because the main protagonists were clearly adult.

As expected, the exploration of gender-related differences proved valuable. Whilst, overall, both girls and boys appreciated the alcohol advertisements, it was interesting to note that the boys preferred them slightly more than the girls did, and that at individual advertisement level, boys liked beer advertisements more than girls did. This concurs with the Connolly et al. (1994) study and confirms the need to include advertisements for other alcoholic drinks, in addition to beer, in future studies. Only one beer advertisement appealed to both boys and girls: Boddington's and is, perhaps, evidence of the wider appeal of an advertisement in cartoon format. Boys, rather than girls, also appreciated Smirnoff Ice advertisement and this is probably due to the successful male protagonist in the advertisement.

Having established that children find alcohol advertisements appealing and identified particular features that make them attractive, what about the effectiveness of the advertisement in tempting the potential consumer? For this question, clear age-



related differences were found, moreover these differences were contrary to expectations. As children matured they were *less* likely to want to try an alcoholic product. This raises two questions: firstly, what was responsible for these differences? And secondly, why were age-related differences found?

There are a number of possible explanations which could account for the decrease in temptation to try as a function of age. Firstly, advertising scepticism could account for these findings. In other words, as knowledge of advertising develops, young people become aware of the advocatory nature of advertising and are sceptical of the claims made (Boush, Friestad, & Rose, 1994). However, if that were so, in this instance, similar findings would be expected for non-alcohol products and yet this was not the case. It would therefore seem sensible to rule out advertising scepticism. An alternative explanation may be that children are starting to try alcoholic drinks and are, perhaps, put off by their taste and effects. On the other hand, this would appear to contradict findings in the longitudinal study (Chapter 7), where experience with alcohol among Year 5 children appears to lead to increased alcohol expectancies and, thus, a greater likelihood of being tempted to try alcohol in Year 5 when compared to Year 3. A further possibility is that the younger children, Year 3, were not aware of the nature of the product being advertised. However, age related differences in this knowledge were not found in the interview study. Whilst it was the case that children had difficulty in some cases in identifying the product being advertised, this was the same for all age groups.

Finally, perhaps the most likely reason for the age-related differences in responses to this question may arise from the development of domain specific knowledge as proposed in Chapter 2. In essence, this is the idea that younger children's knowledge of alcohol advertising is at an implicit level, LI, whereas older children's knowledge is developing and is at a more explicit level, perhaps E1 or E2, but not yet fully developed. At an implicit level, knowledge is encapsulated; as a result the younger children perceive the advertisement and the product as one and, relying only on implicit knowledge, their response depends more on the nature of the advertisement, a subject with which they are familiar, rather than on the product. As domain specific knowledge about alcohol develops over time, so the distinction of advertisement and product becomes clearer. Consequently, developing knowledge

about both alcohol advertising and alcohol itself leads to a mismatch between implicit and explicit responses as illustrated in the differences in findings between this study and the exploratory study. In this particular instance, as children mature, their knowledge of these two subjects is gradually becoming more explicit and they are beginning to separate the alcohol from the advertisement. As a result they appear to be responding to the product rather than the advertisement resulting in, perhaps, morally 'correct', and even socially desirable, responses. There is support for this idea from both naïve science research where the ability to separate theory and data takes time to develop (Kuhn, 1995a), and from alcohol advertising research where older children and adolescents prefer advertisements which distance themselves from the product (Walters et al., 2001).

This explanation suggests that this particular question, "Would you like to eat/drink this product?", tapped into knowledge at more explicit level than the five questions which comprised the PATTAD score. Indeed the question demands more consideration, and therefore more cognitive processing, It required the children to think not only about the advertisement, but also about the product and whether they would like to try the product. Whilst still at a pre-explicit level, the requirement of this question for a more explicit level of knowledge than that required for the first five questions would account for why age-related differences were found.

In a final reflection on the question of temptation to try, it was interesting to note that the most attractive alcohol advertisements were also those that were most likely to encourage children to want to try the product: namely, Bacardi Breezer, John Smith's and Boddington's. Not only were these advertisements the most popular, they were also those which children perceived as effective.

There was a huge discrepancy between the very positive rating children gave to alcohol advertisements and their recognition that few other children would like it. Whilst, on the one hand, this seems rather like the opposite of the third person effect, i.e. the idea that what affects other people would not affect one's self (Davison, 1983), it seems more likely that, as with the 'temptation to try' question, this question was also tapping into knowledge at a more explicit level. Whereas the first five questions of the sorting paradigm asked about the children's own likes and

dislikes and appeared to successfully tap into implicit knowledge, the last three questions (“Would you like to drink this?”, “Who would like this advert?” and “Who would drink this?”) were not only phrased as questions, but required the responder to consider additional information and slightly different response options. To respond to the questions about who would like an advertisement and who would consume the product required consideration of other people’s likes and dislikes, the advertisement and the product. As a result, it seems that knowledge at a more explicit level, although not fully explicit, was called upon, again resulting in age-related differences in response.

These questions also produced the same notion of personal product salience that appeared in the qualitative study and which is, perhaps, indicative of the more explicit nature of the responses. Children in this study appeared to believe that only those who would consume a product would like the advertisement, even when this clearly contradicted their own views about liking the advertisement. Again, children seem unaware of this particular sales aspect of advertising: selling a product to current non-users. Nevertheless, there was some awareness that the three most popular alcohol advertisements would prove attractive to children. Whilst the number of children who thought that other children would like the Bacardi Breezer, John Smith’s and Boddington’s advertisements was still far lower for children than for teenagers and adults, they were, nevertheless, 2-3 times more likely to say that children would enjoy watching them than the less favoured alcohol ads (Archer’s, Guinness, Smirnoff Black Ice and Budweiser). This suggests, perhaps, that the appeal of these advertisements transcends the nature of the product.

With regard to methodology, the lack of age differences found in children’s own responses to alcohol advertising, in the PATTAD scores, suggests that the sorting paradigm used successfully tapped into implicit knowledge. However, the evidence from this study also suggests that, even in a simple sorting task, decisions beyond children’s own immediate thoughts and feelings, those which required consideration of more than one element (e.g. advertisement, product, others’ responses) drew on knowledge that was at a more explicit level, i.e. E1 or E2. Nonetheless as a task, the methodology tapped into implicit and pre-explicit knowledge, engaged the

children and has provided a wealth of knowledge about children's responses to alcohol advertisements.

In relation to alcohol advertisements, the findings showed that children aged 7 to 10 years old find alcohol advertisements attractive and, in contrast to the qualitative study, this does not differ by age. Moreover, they find them just as appealing as advertisements for non-alcoholic products. At an implicit level, the style and features of an advertisement appear to influence its appeal and a number of these proved to be particularly popular with children. Humour, especially simple, visual humour, a cartoon format and the inclusion of animals or a character (in this instance a male action doll) all increased the appeal of the advertisement. Moreover, children recognised advertisements containing these features as effective.

Having established in these first studies that children enjoy watching alcohol advertisements, and appear to be familiar with them, a further aspect to consider is what type of messages children are taking from advertising and are they accepting, and thus being influenced by, the advertisers' messages? This is addressed in the next chapter.

## Chapter 4

### Story style paradigm

The focus of this chapter is that of the positive, or advocatory, message being promoted in alcohol advertisements and whether it is influencing children's thinking. If children enjoy watching alcohol advertisements, are they accepting the message that is being promoted by the advertiser, and is it affecting their beliefs about alcohol?

Advertising can achieve its aims in a variety of ways. Research suggests there are a number of methods of persuasion, all of which Pechmann & Stewart (1989) suggest "are equally viable; there is no one correct explanation or perspective" (p.34). Indeed, as indicated in Chapter 2, advertisements may promote the quality of a product, they may provide aspirational images or they may include humour, leaving the viewer with the idea that the product, in this case alcohol, is fun. What has been shown in research, however, is that in adults advertising influence occurs at an implicit level (Perfect & Askew, 1994; Stewart Shapiro, MacInnis, & Heckler, 1997).

What can recent studies tell us about the influence of alcohol advertising on young people? In the Dring & Hope (2001) study, adolescents (12-17y) recognised that television alcohol advertisements promote a very positive image of a fun and sociable lifestyle. They identified the aspirational qualities of some advertising, and the message that alcohol can improve social and sexual confidence. Equally they recognised the suggestion that, according to the advertisements at least, those who do not drink are likely to be boring or lonely. These findings are not dissimilar to those in the Waiters, Treno, & Grube (2001) study. However, one of the problems with both of these studies is the difficulty in distinguishing between what young people can explicitly recognise as being promoted in an advertisement and what message

they actually take from the commercial, at a more implicit level. Being able to identify explicitly what an advertiser is portraying is not necessarily indicative of a change in attitude and behaviour towards the product. These studies do not demonstrate whether the participants believe, at an implicit level, that people who consume the advertised product are more sociable, glamorous, popular or fun than those who drink, say, a non-alcoholic drink, or even a generically termed one? In their view, is a beer or lager drinker perceived differently to a 'Boddington's drinker'?

The aim, therefore, in this study was to investigate children's perceptions of people who drink advertised alcoholic drinks in order to discover whether advertising is persuasive and whether it influences their beliefs. Research into persuasion and the persuasive nature of advertising illustrates how alternative methodologies produce different findings in terms of children's understanding. For example, whilst Pine & Veasey (2003) found that children as young as 4-5 demonstrated an implicit awareness of persuasion, Oates, Blades & Gunter (2002) found that even by the age of 10 only just over a third of children were able to produce a satisfactory explicit response about the purpose of television advertisements.

One methodology from social psychology that has successfully tapped implicit knowledge in adults is the use of a story style paradigm. Crisp, Hewstone & Cairns (2001) employed this methodology, using bogus newspaper articles. By varying the content of the articles in terms of gender, religion and outcome (favourable/unfavourable), they explored in and out group biases in Northern Ireland. In this study a similar technique was employed, but the story remained constant for all groups. The variation in this case was the type of drink consumed in the story: generically termed alcohol or brand-named, regularly advertised, alcohol. Non-alcoholic beverages acted as a control. In order to determine whether advertising is influencing children's beliefs about the purported benefits of drinking a specific brand of alcohol, the difference in how positively children rated the characters in the story was assessed. It was predicted that the effects of advertising would influence children's character ratings for the characters in the brand alcohol condition story. Further it was predicted that, by using a method which taps into implicit knowledge, there would be little difference by age group.

## Method

### Design

The experiment had a between groups 3 (story type) x 3 (age) x 2 (gender) design with character ratings as the dependent variable. The three independent variables were story, year and gender. The variable 'story' had three conditions: in condition 1 the children heard the story with branded alcohol names, in condition 2 the branded names were replaced by generic terms and in the control condition non-alcoholic drinks were mentioned. The year variable related to grouping the children by school year, Years 3, 4 and 5. Repeated measures anovas were planned to explore differences by condition for each age group. Gender differences were analysed and a one way anova explored predicted frequency of consumption.

### Participants

A total of 215 children from Years 3, 4 and 5 took part in this study and comprised 104 boys and 111 girls. The youngest child was 7y 10m and the eldest was 10y 9m. The mean ages for the year groups were as follows:

Year 3 (n=68)  $M = 8$  years 3 months ( $SD = 3.47$  months);

Year 4 (n=72)  $M = 9$  years 4 months ( $SD = 3.3$  months);

Year 5 (n = 75)  $M = 10$  years 3 months ( $SD = 3.25$  months).

Parents were informed of the nature of the study which, in line with the headteacher's request, used an implied consent procedure. From a total of 225 letters sent out to parents, eight parents asked for their children to be withdrawn from the study and two forms were incomplete.

The school was a three form entry junior school based in Hertfordshire. This allowed for three groups per year: 2 experimental and 1 control. Within their year groups, classes were randomly assigned to an experimental group.

Brandname group (1 class from Y3, Y4 and Y5):  $n = 72$  ( $M = 9y\ 4m$ ,  $SD = 10.77m$ )

Generic name group (1 class from Y3, Y4 and Y5):  $n = 75$  ( $M = 9y\ 4m$ ,  $SD = 10.21m$ )

Non-alcohol group (1 class from Y3, Y4 and Y5):  $n = 68$  ( $M = 9y\ 3m$   $SD = 9.99m$ )

## Materials

The study was based on a short story and a simple questionnaire. The questionnaire was constructed to assess the children's perceptions of the characters in the story and, specifically, to assess whether these perceptions differed by condition, i.e. according to the type of drink consumed.

A pilot study was carried out with two short stories which included the two main characters, a man and a woman, consuming a drink. The pilot took place with groups of Year 3 and Year 5 children at a different primary school in Hertfordshire to the one used for the main study ( $n = 45$ ,  $M = 9y\ 3m$ ,  $SD = 12.38m$ ). The stories used in the pilot mentioned only non-alcoholic drinks simply to determine whether there was an effect of story. No effect of story was found ( $t(43) = -.94$ , n.s.) which meant that just one story could be used with all groups. The questionnaire and the final story can be found in Appendix D. The piloted questionnaire was tested for reliability using Cronbach's internal consistency measure which gave an alpha of .84 for 14 items with  $n = 45$ .

The final story involved two friends decorating and then stopping for lunch, which included drinks. In the story Carlsberg and Bacardi Breezer were the named drinks in the advertised brand-named alcoholic drink condition. Carlsberg was used as it had been advertised regularly during a recently televised European football championship. The advertisement being shown at the time incorporated image advertisement qualities, showing young adults living in luxurious accommodation and circumstances. Bacardi Breezer has been regularly advertised over the past few years and often involves anthropomorphic images of a cat going out to nightclubs and portrayed as having an exciting life. The qualitative and categorisation studies both suggest that these advertisements are popular with children in the 7-10 year age group. These brand-named drinks were replaced in the generic condition by lager,



and rum and orange. For the control group, the story included a can of lemonade and a glass of fresh orange juice.

The questionnaire comprised eight questions per character, i.e. 16 questions in total. The first seven had a four point Likert scale and depicted an increasing number of smiley faces above evaluative options, e.g. How many friends does Ben have? For this particular question the response options were ‘not many’, ‘a few’, ‘quite a few’ and ‘lots’. Other questions used different, but similarly evaluative, response options. Questions related to the characters’ popularity, intelligence, sociability and attractiveness to the opposite sex. The eighth question for each character related to frequency of drinking. Table 4.1, below, lists the questions used in the questionnaire. An identical set of questions relating to the female character, Jane, was used. A copy of the questionnaire can be found in Appendix E.

**Table 4.1. Example of the questions used in story style paradigm**

	Question
1	How cool is Ben?
2	How many friends does Ben have?
3	Is Ben fun to be with?
4	How clever is Ben?
5	How much does Ben like going to parties and pubs?
6	Do women think Ben is cool?
7	How brave is Ben?
8	How many times a week do you think that Ben drinks the drink he has in the story? (options given were numbers of days 1 to 7)

Tests were conducted for dimensionality, reliability and validity and these figures are given in the results section.

## **Procedure**

The study was carried out within the classroom setting with the class teacher present. After briefly introducing the experimenter, the teacher took no part in the study. Any

children whose parents had declined consent left the classroom to read with a teaching assistant. The experimenter introduced herself to the remaining children and informed them that she wished to know what children of their age thought about characters in stories that they heard or read themselves, be it in fictional or news stories. In order to discover this she was going to read out a very short story and then ask the children to fill in a very simple questionnaire. The story was read out first and the questionnaires were then handed out in order to avoid the children's attention being diverted to the studying the questionnaire. The experimenter read out each question and the available responses for that question to the class and waited while children circled their choice. The whole procedure took between 10-15 minutes per class.

## Results

Responses to questions one to seven were coded 1 to 4 with 4 being the most positive assessment of the character, e.g. very cool. Scores from questions one to seven for both characters, Ben and Jane, were summed to obtain an overall positive character rating score. The summed positive character score was assessed for dimensionality, reliability and outliers; there were no outliers. Factor analysis, with a cut-off loading point of .45, suggested 4 factors: personal attributes (first factor related to Jane's attributes, the second to Ben's), popularity and sociability. Question 4 for both Ben and Jane concerned intelligence and as it did not load sufficiently on any one factor it was removed from further analysis. Internal consistency measures of reliability of the remaining questions produced a coefficient alpha of .79 for 12 items ( $n = 215$ ).

After removal of question 4, the minimum possible score was 12 and the maximum was 48. Table 4.2 presents the means and standard deviations of the positive character ratings for the entire sample.

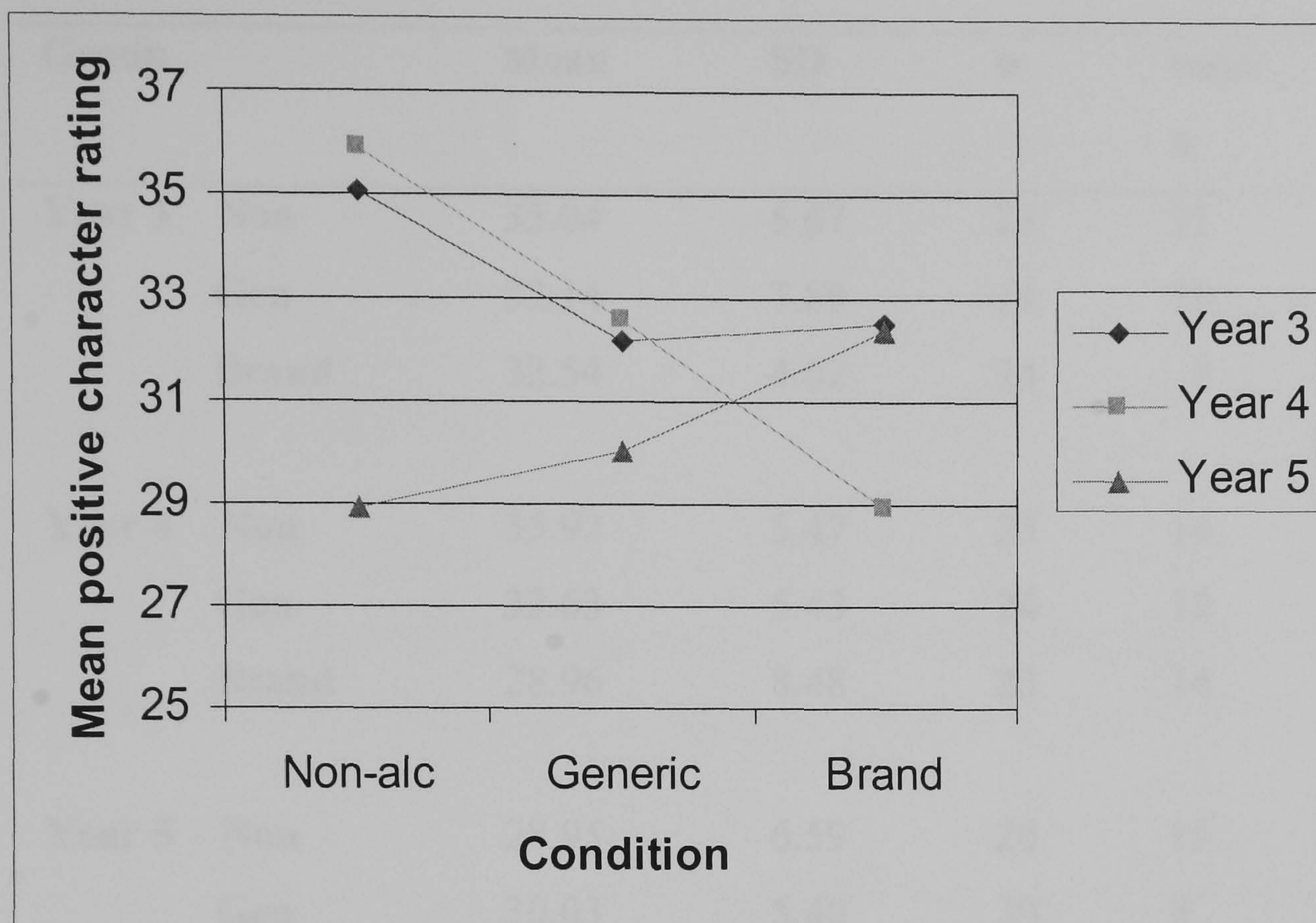
**Table 4.2. Mean positive character ratings by story**

Story	N	Mean	SD
Non-alcohol	68	33.57	6.54
Alcohol – generic	75	31.45	6.28
Alcohol – brand	72	31.33	6.64

A 3 x 3 x 2 Anova was conducted to evaluate the effects of story, year group and gender on positive character rating. The Anova indicated a significant main effect for story,  $F(2, 197) = 4.30, p < .05, \text{partial } \eta^2 = .04$ . Contrary to predictions, the characters in the generic and brand-named alcohol conditions were less highly rated than those in the control condition. Planned post hoc tests revealed that higher ratings in the non-alcohol condition differed significantly from both the generic and the brand conditions. There were no significant differences between the means for the two alcohol stories, suggesting that it was the effect of including alcohol *per se*, rather than a brand name, that affected the judgement.

There was also a main effect of gender,  $F(1, 197) = 10.80, p < .01, \text{partial } \eta^2 = .05$ . The girls' mean rating of the characters was 33.37 (SD = 6.11), whilst the boys rated them less positively with a mean of 30.71 (SD = 6.72). Whilst there was no significant effect of year,  $F(2, 197) = 2.03, \text{n.s.}$ , there was a significant interaction between story and year,  $F(4, 197) = 2.82, p < .05, \text{partial } \eta^2 = .05$  and this is clearly illustrated in Fig. 4.1 below.

**Figure 4.1. Mean character rating by condition and age group**



It was noted that Levene's test for equality of variances was significant and the assumption of homogeneity of variance was therefore violated, suggesting that there were differences in groups before testing. The possible causes for this and consequences are discussed later in the results section.

Further analysis investigated whether children perceived Ben and Jane differently. With a mean rating for both characters of  $M = 16.04$  ( $SD = 3.51$  for Ben,  $SD = 4.26$  for Jane) out of a possible maximum of 24, no significant differences were identified in an Anova, nor was there any significant interaction between story and character rating.

### **Analyses by year group**

As the interaction between story and year group was significant, the means for each year group were explored further with 3 x 2 ANOVAs. Table 4.2 gives the means by year group, story and gender. To control for Type 1 error, the alpha was set to .016.

**Table 4.3. Mean positive character ratings by year group and story**

Group		Mean	SD	n	boys n	girls n
Year 3	Non	35.04	5.67	23	11	12
	Gen	32.14	7.89	21	10	11
	Brand	32.54	4.02	24	8	16
Year 4	Non	35.92	5.47	25	14	11
	Gen	32.63	5.43	24	12	12
	Brand	28.96	8.48	23	14	9
Year 5	Non	28.95	6.59	20	15	5
	Gen	30.03	5.40	30	9	21
	Brand	32.36	6.41	25	11	14

***Year 3***

For Year 3 children, in a 3 x 2 between groups ANOVA there was no significant main effect of story,  $F(2,62) = 2.00$ , n.s. However, the main effect of gender, whereby girls rated the characters more highly, was still present. The mean rating by girls was  $M = 34.85$  ( $SD = 4.98$ ) whilst the boys' mean rating of the characters was  $M = 31.14$  ( $SD = 6.72$ ), this difference was reliable,  $F(1,62) = 7.51$ ,  $p < .01$ , partial  $\eta^2 = .11$ . There was no effect of gender by story, confirming that girls in this year group are more inclined to rate characters more positively irrespective of condition.

***Year 4***

In this Year group there was a main effect of story,  $F(2,66) = 6.46$ ,  $p < .01$ , partial  $\eta^2 = .16$ . As Figure 4.1 suggests, children at this age were rating the characters in the alcohol conditions less positively than those in the non-alcohol condition. Post hoc analyses revealed that the differences in means were significant for non-alcohol and brand alcohol only. There was no interaction between story and gender,  $F(2,66) = .17$ , n.s.

### ***Year 5***

No significant main effect of story was found,  $F(2,69) = 1.36$ , n.s. However, as with Year 3 children there was a significant main effect of gender,  $F(1,69) = 8.66$ ,  $p < .01$ , partial  $\eta^2 = .11$ . There was no interaction between story and gender,  $F(2,69) = 1.12$ , n.s.

### **Condition by year group**

In addition to the analysis by year group, each condition was compared by year to determine whether conditions were perceived in a similar way, e.g. was Year 5's opinion of drinkers of non-alcoholic beverages the same as Year 4's?

#### ***Non-alcohol***

Analysis of variance was applied to the ratings for each story by year in order to determine whether different years perceived the characters differently. Ratings for the non-alcohol drinks were found to be reliably different with means of 35.04 (SD = 5.68), 35.92 (SD = 5.48), and 28.95 (SD = 6.59) for Years 3, 4 and 5 respectively,  $F(2, ) = 8.867$ ,  $p < .01$ , partial  $\eta^2 = .21$ . Thus, the Year 5 children appeared to rate the characters in the non-alcohol condition less positively than the other two year groups. This is despite this group not hearing the other stories. However it may be the result of an uneven representation of boys and girls in the sample, see Table 4.2. As girls in this study have been found to rate the characters more highly than boys and with only 5 girls to 15 boys in this group then this would lower the sample mean for that group. This mean difference could account for the heterogeneity of variance identified by Levene's test of equality of variances in the original ANOVA.

#### ***Generically termed alcohol***

Mean ratings for characters in this condition were 32.14 (SD = 7.88), 32.63 (SD = 5.63) and 30.03 (SD = 5.4) for Years 3, 4 and 5 respectively, these did not differ significantly,  $F(2,72) = 1.32$ , n.s.

#### ***Brand named alcohol***

Mean ratings for characters in the brand-named alcohol story were 32.54 (SD = 4.02), 28.96 (SD = 8.48) and 32.36 (SD = 6.41) for Years 3, 4 and 5 respectively. Whilst these did not differ significantly, post hoc tests (LSD) indicated that the Year

4 children's mean rating was approaching significance, e.g.  $p = .064$ , and  $p = .076$ , suggesting that they tended to rate the characters in this condition less favourably than children in Years 3 and 5.

## Drinks

The final analysis concerned how many drinks of the type mentioned in the story the children expected the characters to drink per week. Means were calculated from the sum of Ben's and Jane's drinks (question 8). By condition these means were 10.47 (SD = 3.97), 8.95 (SD = 3.77) and 9.54 (SD = 4.36) for non-alcohol, generic alcohol and brand alcohol conditions respectively. In a one-way between groups analysis of variance these differences were not significant,  $F(2,197) = 2.073$ , n.s., partial  $\eta^2 = .024$ . This suggests that children perceive adults as drinking alcoholic drinks with the same frequency as soft drinks.

## Discussion

Firstly, the conclusion must be that there was an effect of manipulation: the inclusion of an alcoholic drink, either generically termed or brand-named, influenced children's attitudes in terms of their perceptions of the characters in the story. However, contrary to the original hypothesis that alcohol advertising would induce children to perceive the characters consuming alcoholic drinks more positively, it appears that children perceived the characters in the two alcohol conditions less favourably than in the control, or non-alcohol, condition. Moreover, the interaction between story and year group was revealing. It appears that only children in Year 4 were influenced in this way: they perceived people who consumed alcohol far less favourably than non-alcoholic drinkers.

One unexpected finding, though, was the sizeable gender effect which appeared to be unrelated to condition, but rather to the fact that girls were far more positive in their appraisal of characters. As such, where samples included unequal numbers of boys and girls, it is important to be tentative about the results and, of course, to recommend that any replication of this study seeks to clarify any disproportionate

effect by comprising equal sample sizes by gender. The disparity in this case occurred as, unknown to the experimenter, the children in Year 5 were in their literacy groups and this resulted in disproportionate sample sizes by gender.

The second prediction was that the use of this measure would tap implicit knowledge and, consequently, no differences in knowledge and ideas by age group would be expected. However, this was not found to be the case and suggests that this measure should be regarded as a measure of pre-explicit and developing knowledge, rather than implicit knowledge. As with the two previous studies, it appears that children's knowledge of alcohol is undergoing change over time and this influences their responses. However, rather than changes in children's alcohol beliefs starting in Year 5, as the interview study suggests, this study indicates that change is occurring earlier than this, in Year 4, at around the age of 8 years old. In fact, these findings tend to confirm the gradual change in beliefs indicated in Fig. 3.5 by pre-explicit responses to the "Would you like to drink this?" question in the categorisation study. The slightly less favourable rating by Year 4 children of drinkers of brand-named alcohol is perhaps indicative of the transition in knowledge that led to more explicit negative attitude expressed by Year 5 children in the qualitative study.

Nonetheless, there was generally little difference between perceptions of drinkers of generically termed and brand-named alcohol. This suggests a number of possibilities. Firstly, advertising may not have been influencing their responses or, secondly, it may have been simply that children perceived 'Carlsberg' and 'lager' as interchangeable terms for alcoholic drinks. A third possibility is that children's developing knowledge of alcohol was influencing their responses and, consequently, it is imperative that studies researching alcohol advertising take this into consideration. Explicit responses about alcohol advertising as in the interview study and, to a certain extent the findings from this study, may be more influenced by the interaction between developing alcohol knowledge and the advertisements than by the advertisements alone. Indeed, anecdotal evidence from this study tends to support this: one boy with hearing difficulties in Year 4 asked the experimenter to repeat the name of the drink. As the experimenter repeated "Carlsberg", the boy's neighbour turned to him and whispered, "It's a bit naughty!".



This study demonstrates how difficult it is to separate out alcohol knowledge from advertising influence. Nonetheless, as a manipulation task, the story style paradigm worked well; moreover, it was simple to administer and it engaged the children's attention. Whilst not tapping into implicit knowledge, the findings nevertheless have merit in that they give an indication of how and when beliefs about alcohol are changing in childhood. This is essential information for assessing children's susceptibility to environmental influences, whether in terms of advertising or intervention programmes. As already indicated, the findings from this study need to be viewed in light of the unequal sample sizes by gender because of the strong gender effect and any replication should seek to remedy this. In a replication, it would also be interesting to see whether Year 2 children have similar views to those in Year 3. Similarly, it would be valuable to note whether the trend for Year 5 children to rate drinkers of brand-named alcohol more favourably than drinkers of non-alcohol and generically termed drinks continues and increases, to a statistically significant level, in Year 6 children. If this were the case then it would support the argument that alcohol advertising is influencing children's attitudes, at least in children around the age of 11 years old.

### **General discussion: The response of children aged 7 to 10 years old to television alcohol advertisements**

The findings from the studies reported in chapters 2 and 3, and in this chapter represent a substantial amount of information regarding the perceptions and ideas of children below the age of 10 about alcohol advertising and constitute the first time such a range of studies has been undertaken. This is complemented by the development of new measures which tap into implicit and pre-explicit levels of beliefs and which are suitable for use with children in the 7 to 10 year age group.

The studies indicate that children as young as 7 years old find alcohol advertisements attractive and they enjoy watching them and, in contrast with some previous studies, the same can be said of 10 year olds (e.g. Aitken, Leather et al., 1988). However, the findings also suggest that the appeal of the advertisement is linked to its style rather than the product being advertised, thus not all alcohol advertisements have the same

attraction. Simple visual humour, cartoon format or the inclusion of an animal or character appear to increase the appeal of alcohol advertisements to children.

Children seem to be unaware of the true motives of the advertiser in that they tend to believe that only those people who use a product would watch such advertisements. Moreover the deceptive nature of some advertisements means that it is difficult for children to assess whether it is of interest.

The studies also suggest that domain specific knowledge is developing for both alcohol and alcohol advertisements. Moreover as this knowledge becomes more explicit it seems that knowledge about alcohol is influencing children's pre-explicit and verbal responses to alcohol advertising. As a result, simply asking children for their responses to alcohol advertisements, as in the Aitken et al. (1988) and Waiters et al. (2001) studies, presents a distorted picture as their answers appear to reflect their developing knowledge of alcohol rather than what they think about the advertisement itself. Thus, the older children explicitly deny liking alcohol advertisements, but implicitly they find them attractive. It is therefore important to gather information using a range of methodologies which tap into different levels of domain specific knowledge development in order to understand children's thinking.

The categorisation study demonstrated the benefits of tapping into implicit knowledge and how spontaneous responses requiring little cognitive mediation produce findings that can differ considerably to that of verbalisable knowledge. This concurs with the theoretical issues identified in Chapter 1, namely that children can have different levels of knowledge and attitudes and that not all knowledge is available for verbal report (Karmiloff Smith, 1992; Pine & Messer, 1999). At the same time, the findings from the questions in that study and from the story style paradigm reported in this chapter show that domain specific knowledge development is occurring with age-related differences appearing as knowledge becomes more explicit over time.

Continuing on a theoretical note, it is perhaps worth recognising that the large discrepancy between personal liking and other children's liking (Figure 3.6) may be representative, in general, of the difference between implicit knowledge, LI, and knowledge that is in development, e.g. Level E1/2. If this is so, then it again

provides evidence for the benefits of using measures which access knowledge at different levels of development in applied developmental studies, as well as in more theoretically based research. Such measures can provide a far greater awareness of the development of domain specific knowledge and its complexity. Moreover, a comparison of these measures in future advertising research could help to establish when children can explicitly recognise the sales aspect of advertising.

These studies show that processes, such as Representational Redescription (Karmiloff Smith, 1992), that have previously been applied mainly to areas of scientific knowledge development, e.g. mathematical skills, physics theories, etc. can also be applied to everyday cultural and social learning, e.g. effects of television and television advertising. The development of knowledge is complex and dynamic with interaction between different domains. They have also highlighted the necessity for the use of multiple methodologies in order to understand the full range of children's thinking.

## Chapter 5

### Introduction to the longitudinal study

As discussed in Chapter 1, one of the recurrent questions in the literature on the potential influence of alcohol advertising is how to establish directional causality, i.e. are young people who are interested in alcohol more attentive to alcohol advertisements or are the advertisements stimulating the interest in young people. The third aim of the research programme was to investigate this by undertaking longitudinal research in order to gather time-order evidence as a number of researchers have suggested that this may be one way of resolving the issue (e.g. Aitken, Eadie, Leather, McNeill, & Scott, 1988; Austin & Knaus, 2000; Grube & Wallack, 1994).

In the following four chapters a three year longitudinal study with this purpose is reported. In this chapter, the background to the study is set out which identifies suitable dependent, independent, mediating and moderator variables. The aims of the study are identified and the methodology is described. In Chapter 6 the development and piloting of measures for the main longitudinal study are described. Chapter 7 reports on the establishment of the main study and its findings in terms of changes over time in children's knowledge and beliefs. In Chapter 8 the data is modelled to determine the relative contribution of early exposure to television alcohol advertising on later alcohol beliefs.

Clearly, children's beliefs about alcohol and televised alcohol advertisements do not exist in a vacuum. A multivariate approach is required as research on adolescents indicates that a number of other environmental and psychological influences contribute to their understanding and beliefs about alcohol and, often, to a far greater extent than that of advertising, e.g. family and peers (see, for example, Griffin,

Botvin, Epstein, Doyle, & Diaz, 2000; Ouellette et al., 1999; Strickland & Pittman, 1984). However, before potential influences are considered in depth, it is important to identify a suitable dependent variable for the study. In a study with children, at a period in their lives before the onset of drinking, alcohol consumption clearly cannot be measured and the use of an alternative measure which has been demonstrated to predict drinking behaviour is essential. Research suggests that a measure of alcohol expectancies would provide this.

### **Alcohol expectancies**

Alcohol expectancies are the beliefs people hold about alcohol and about how it affects behaviour. In adults, positive alcohol expectancies have been found to reliably predict alcohol behaviour (Brown, Goldman, Inn, & Anderson, 1981). Moreover, high positive expectancies have been shown to predict abusive behaviour, the quantity of alcohol consumed by alcoholics, and even the length of treatment for alcoholism (Brown, Christiansen, & Goldman, 1987). In adolescents positive alcohol expectancies have been shown to be just as reliable at predicting both current and later alcohol behaviour (Christiansen & Goldman, 1983; Christiansen et al., 1989).

How do alcohol expectancies operate? Christiansen, Smith, Roehling, & Goldman (1989) suggest that psychological factors can be “as important as, and sometimes independent of, [the] pharmacology [of alcohol]” (p.93) in alcohol behaviour. These factors can account for the alcohol placebo effect, or why “the mere belief that alcohol is being imbibed has been found to influence social, sexual and aggressive behaviour” (Brown, Christiansen et al., 1987 p.483). It is suggested that expectancies develop on an ‘if ... then’ basis, e.g. if I drink this beer, then I will be more relaxed. Whilst this could suppose a conditioning, or behavioural, background, this is not the case as expectancies have been shown to develop vicariously, in the absence of reinforcement which suggests that they are cognitively mediated. Nonetheless, whilst it is acknowledged that high positive alcohol expectancies can be regarded as mediators to abusive alcohol behaviour, there also appears to be a

complex mix of both emitted behaviour, as a result of the expectancies, and the pharmacological effects of alcohol, with one reinforcing, or confirming, the other.

An awareness of alcohol expectancies led to the development of the Alcohol Expectancy Questionnaire (AEQ) (Brown et al., 1981) which has proved to be a reliable measure and means of predicting alcohol behaviour in adults. A further development of the AEQ was the AEQ-A, designed for use with adolescents who had less experience with alcohol; again, this proved to be reliable (Brown, Christiansen et al., 1987). For adolescents, the scale of 90 items comprises seven subscales: global positive changes, changes in social behaviour, improved cognitive and motor abilities, sexual enhancement, cognitive and motor impairment, increased arousal and relaxation and tension reduction. Responses are a simple dichotomous 'yes' or 'no'. One criticism of a number of alcohol advertising studies involving children and young adolescents is that the measure of alcohol expectancy sometimes relies on very few questions. For example, alcohol expectancy was determined by only one question in Austin & Nach Ferguson's (1995) study, by three questions in Fleming, Thorson, & Atkin's (2004) study and by five positive and five negative questions in yet another study (Grube & Wallack, 1994). Such measures clearly do not satisfactorily represent the diverse subscales suggested by previous research in the development of the AEQ measure (Brown, Christiansen et al., 1987; Brown et al., 1981). To provide a valid and reliable dependent variable, the development and testing of a more satisfactory measure suitable for children is required.

What does research indicate about alcohol beliefs in childhood and early adolescence, before the onset of drinking which provides the direct experience of the pharmacological effects of alcohol? Do children have beliefs, or expectancies about alcohol and are they predictive of later alcohol behaviour? Research with children suggests that alcohol beliefs and expectancies start forming before the onset of drinking, at around the age of 8.5 years to 10 years (Cumsille, Sayer, & Graham, 2000; Miller, Smith, & Goldman, 1990). Moreover, alcohol expectancies appear to play a mediational role between childhood beliefs and later alcohol behaviour. Indeed, longitudinal research by Aas, Leigh, Anderssen, & Jakobsen (1998) following a group of early adolescents from the age of 13 to 15 confirm that alcohol

expectancies prior to the onset of drinking predict later drinking behaviour in this age group.

Thus, despite not having experience with alcohol, children appear to develop beliefs, or expectancies, about it. What, then, are the precursors, or antecedents, of these alcohol expectancies in children? As already indicated, the aim of this prospective study was to assess the relative contribution of any such predictor variables on alcohol expectancies through structural equation modelling. In this way it would be possible to evaluate the extent of television alcohol advertising as a contributor to these expectancies and, thus, the potential long term effect of exposure to such advertising in childhood.

A number of potential influences on alcohol expectancies have been identified in research. For example, the role of family and peers are recognised as particularly influential on children's beliefs and opinions about alcohol (Aas et al., 1998; Griffin et al., 2000; Ouellette et al., 1999; Strickland & Pittman, 1984; Tinsley, 1992) and children's self-esteem has also been identified as a moderating factor (Almarsdottir & Bush, 1992; Tinsley, 1992). Television, and television advertising in particular because of its advocacy nature, are suggested as further possible influences by a number of researchers in the alcohol field (e.g. Aitken, Eadie, Leather, McNeill, & Scott, 1988; Austin & Meili, 1994; Christiansen et al., 1989; Fleming et al., 2004; Grube & Wallack, 1994) and by health researchers such as Almarsdottir & Bush (1992) in their Children's Health Belief Model. Equally, whilst alcohol expectancies have been shown to develop in the absence of personal experience with alcohol, it does, nevertheless, appear to influence expectancies and should therefore be considered as a moderating variable (Dunn & Goldman, 1998; Ouellette et al., 1999). What can research tell us about the relative role of these and other potential influences on alcohol expectancies in young people?

### **Family and peer influence**

Family and peer attitudes and behaviours are recognised as important influences on children's ideas and beliefs (Almarsdottir & Bush, 1992) and studies indicate that

high exposure to adults and peers who drink leads children to have higher alcohol expectancies (Brown, Creamer, & Stetson, 1987; Cumsille et al., 2000; Dunn & Goldman, 1998; Miller et al., 1990). In terms of parental and family influence, alcohol expectancies are associated with both social modelling behaviour and the provision of information about alcohol (Cumsille et al., 2000; Grube & Wallack, 1994; Ouellette et al., 1999; e.g. Strickland & Pittman, 1984). For adolescents, family influences, e.g. adult drinking behaviour, have been shown to increase alcohol expectancies (Brown, Creamer et al., 1987). However, in a study with children the reverse was found: children from families that included an identified alcoholic were more likely to have lower expectancies (Miller et al., 1990), perhaps due to exposure to the negative consequences of alcoholism. Nonetheless, in the same study there was a tendency for the mother's drinking behaviour to be related to alcohol expectancies.

The influence of peers in relation to alcohol expectancies and consumption is well documented. For example, Cumsille et al. (2000) found that the positive alcohol expectancies of children and adolescents exposed to peers who drink were not only higher at an earlier age, but also increased more rapidly than in children who were not exposed to peer drinking. Scheier & Botvin (1997) found peer attitudes and behaviours to be significant contributors to alcohol expectancies, as did Ouellette et al. (1999) and Grube & Wallack (1994), whilst Griffin et al. (2000) found heavier alcohol consumption related to having the majority of one's friends drink.

Moreover, findings from various studies suggest that peer influence may be greater than parental behaviour on alcohol expectancies in adolescence (e.g. Griffin et al., 2000; Ouellette et al., 1999).

These findings make it clear that any studies exploring alcohol expectancies in children and adolescents need to incorporate measures of perceived parental and peer attitudes and behaviours.



## **Television and television advertising**

A recent government survey found that over 80% of children aged 11-15 stated that their source of information about alcohol was television (Bates et al., 2005). This suggests that it is important to include television itself, rather than solely alcohol advertising, as a source of information and potential influence. In this section, therefore, consideration is given to research and findings about television viewing and related alcohol consumption. This is followed by a reiteration of the key findings reported in Chapter 1 regarding the possible effects of television alcohol advertising.

Whilst Anderson et al. (2001) found no relationship in a longitudinal study between pre-school television viewing and adolescent drinking behaviour, this does not appear to be the case for older children. For example, exposure to alcohol consumption in television programmes was related to increased positive perceptions of alcohol by boys (Kotch, Coulter, & Lipsitz, 1986), and increased television viewing was found to be a risk factor for onset of alcohol use in adolescents, although, as with advertising studies, attributing causality is difficult as it may be that children who watch more television are more predisposed to drinking (Robinson et al., 1998). Nonetheless it is important to be aware of the effects of television programmes, as opposed to advertising, as alcohol is commonly consumed in many drama programmes, and particularly in 'soap operas' where the public house or bar is frequently used as a convenient backdrop for characters to interact (Furnham, Ingle, Gunter, & McClelland, 1997). Thus there may be direct effects of television on alcohol expectancies, in addition to any indirect effects of increased exposure to alcohol advertising.

Alcohol advertisements on television are appreciated by young people (e.g. Dring & Hope, 2001; Waiters et al., 2001). As indicated by the studies described earlier in this thesis, even children as young as 7 enjoy watching them. Trying to ascertain their influence on attitudes and behaviour is more difficult and, hence, the reason for this study. One important aspect of research in this area is how to determine children's exposure to television alcohol advertising. In view of the non-

experimental nature of many alcohol advertising studies, an accurate way of measuring this is crucial. For example, in the UK two non-commercial mainstream television channels exist; this differs to those countries where much of the previous research has been carried and, as a result, provision needs to be made for this, i.e. the amount of commercial television viewing needs to be assessed. The close association between alcohol promotion and sports has been posited as influential (Bloom, Hogan, & Blazing, 1997), and the prevalence of alcohol advertising during sports programming suggests that televised sports viewing should be assessed. However, simply assessing television viewing time is not necessarily a good indicator of advertising exposure and Unger, Schuster, Zogg, Dent, & Stacy (2003) found that, for 8<sup>th</sup> and 10<sup>th</sup> grade students, advertisement recall, liking of alcohol advertisements and media receptivity were all independently positively associated with measures of susceptibility to drinking and alcohol use and abuse. A measure of exposure to television advertising should therefore include at least one of these three factors. This would act as a mediator between television viewing and alcohol expectancies.

## **Self-esteem**

This self-evaluative construct is particularly important as children move from childhood to early adolescence, as in this study. Whereas in adults it can be argued that the direction of causality is questionable, i.e. abusive drinking may cause low self-esteem, rather than low self-esteem causing abusive drinking, clearly this is not the case with children prior to the onset of drinking. Whilst self-esteem has been shown to increase throughout adolescence, it is at a particularly low point in early adolescence, at the age of 12 and 13 (Rosenberg, 1986). How is this related to alcohol and advertising? Whilst not indicated as a precursor of alcohol expectancies in itself, self-esteem appears, nonetheless, to act as a moderator on causal influences: both Tinsley (1992) and Almarsdottir & Bush (1992) indicate that self-esteem is positively implicated in children's health attitudes and behaviours. Furthermore the construct has been negatively related to both conformity and persuasibility, and positively related to scepticism with regard to advertising (Boush et al., 1994). This suggests that children with low self-esteem may be more likely to be influenced by

advertising. Whilst appearing to have a dual role of both moderator and mediator, self-esteem appears to have a predictive role and could therefore be considered as an independent, or predictor, variable.

### **Personal experience of alcohol**

So far, the vicarious influence of adult and peer behaviour, perhaps through social modelling, has been suggested as contributing to alcohol expectancies. However, research suggests that personal experience with alcohol, i.e. trying an alcoholic drink, also appears to increase expectancies (Aas et al., 1998). For example, in their longitudinal study, in addition to the predictive nature of pre-drinking expectancies, Aas et al. also found evidence of a reciprocal relationship between expectancies and drinking experience in the early stages of drinking as “the largest increases in expectancy occurred just after drinking initiation” (Aas et al., 1998, p.381).

In other studies personal experience with alcohol resulted in increasing positive and arousal expectancies, rather than increasing negative, sedating expectancies (Dunn & Goldman, 1998) and it was found to indirectly increase alcohol expectancies via prototype modelling, i.e. images or perceptions of alcohol drinkers (Ouellette et al., 1999). Heavier alcohol consumption in late adolescence was also predicted by experimentation with alcohol in early adolescence (Griffin et al., 2000). As pioneers of adolescent alcohol expectancy measures Christiansen and Goldman, together with Inn, also found changes in measured alcohol expectancies, with responses on the subscales of the AEQ-A becoming more homogenous with alcohol experience and they suggest that “pharmacological experience with alcohol crystallizes existing expectancies” (Christiansen, Goldman, & Inn, 1982, p.336). Whilst this may be the case, it is difficult to dissociate experience with alcohol from the gradual development and clarification of alcohol knowledge and beliefs, which may also account for the increased homogeneity of the subscales. Nonetheless, as a potential moderating influence on alcohol expectancies in early adolescence, personal experience appears to be an important consideration.

## **Gender**

Gender related differences arise frequently in alcohol advertising research as indicated in the Connolly et al. (1994) study and in the earlier categorisation study reported in Chapter 3. Therefore the role of gender as a moderating influence should be investigated.

## **Viewing context: co-viewing with an adult or alone**

One final potential moderating influence on children's exposure to television alcohol advertising arises from a study exploring children's choices at Christmas time (Pine & Nash, 2002). In the study, it was found that children, aged 4-6 years old, who watched television alone were more likely to request brand named items than children who watched television with an adult. This suggested that, perhaps, the lone viewers paid more attention to television advertising and were more influenced by it. Interestingly, this contrasts with research into children and television generally which suggests that there are benefits in terms of learning for those children who co-view with an adult (J. C. Wright, St Peters, & Huston, 1990). Moreover findings from an alcohol advertising study by Austin & Nach Ferguson (1995) suggested that parents were unintentionally reinforcing the advertising message. Therefore, whether children watch television alone or with an adult should be investigated as a moderating variable.

## **Aims**

This introduction to the longitudinal study has not only identified alcohol expectancies as a reliable predictor of alcohol behaviour, but has also highlighted what may be precursors of these expectancies. It is clear that television alcohol advertising is just one of a number of potential influences. A longitudinal study to investigate the contribution of alcohol advertising to alcohol expectancies will enable the exploration of the long term effects of exposure to alcohol advertising in childhood. At the same time it would also provide the opportunity to gather more

extensive data on how children's ideas and beliefs in this area change and develop over time. With this in mind, there are two principal aims of the longitudinal study:

1. To investigate how children's expectancies, beliefs and personal perceptions of alcohol change and develop over time; and how their awareness of television alcohol advertising, as a measure of exposure, develops and changes at the same time.
2. To investigate whether, and to what extent, exposure to television alcohol advertisements in childhood contributes to later alcohol expectancies in early adolescence when modelled with other potential influences.

In order to address these aims, a number of methodological issues needed to be considered in designing the study, e.g. the most appropriate type of longitudinal study, the age of the children at the beginning of the study and the frequency of data collections. In some instances these considerations were related to the longitudinal study as a whole, and in others to addressing the particular requirements of the individual aims.

## **Methodological and design considerations**

### ***Longitudinal design***

The first aim of the study was to investigate the evolution of children's beliefs and expectancies of alcohol and a number of influences on these. Whilst longitudinal studies can take a number of formats, including repeated cross-sectional and retrospective studies, the most appropriate way to identify changes over time is through a prospective design following a representative panel of participants for the duration of the research (Ruspini, 2000). Thus the proposal for the longitudinal study was to recruit one cohort of children, and schools, who would be prepared to be re-visited on a number of occasions. Moreover, the continuity of using a single cohort increases confidence in the validity of the data for modelling the longitudinal effects (Maruyama, 1998).

### *Age of participants*

A consideration for both the longitudinal study and for the piloting and development of measures, was the age at which the first measures should be taken. It was decided to commence the study with children aged 9-10 years old for a number of reasons. Firstly, this would be very likely to be pre-onset of drinking. Secondly, alcohol expectancies are known to start developing around this age (e.g. Cumsille et al., 2000). Thirdly, and more related to the nature of the study, is the question of attrition which can prove to be a problem with any longitudinal study. A three tier system of lower, middle and upper schools operates in a small number of counties in England, with the middle school providing education from Year 5 (9-10 years) to Year 8 (12-13 years). By commencing the study with 9 year old children, participants could be recruited from middle schools, thus minimising attrition rates as children could be followed from to Year 5 to Year 8 in the same school. In this way the problem of losing participants at the time of progression to senior school would be avoided and a three year study tracking children into early adolescence would be feasible.

### *Frequency of data collection*

In terms of tracking changes over time, a further consideration was the frequency of data collection. Only three longitudinal studies into children's alcohol expectancies appear to have been undertaken; these were based in the USA and were not related to advertising (Colder, Chassin, Stice, & Curran, 1997; Corvo & Persse, 1998; Shen, Locke-Wellman, & Hill, 2001). As is often the case in developmental studies, data were collected for these studies at 2 or 3 year intervals and thus provide a snapshot of beliefs at certain times. It is such snapshots which can sometimes erroneously support age-stage theories by appearing to demonstrate important age-related differences. However, recent research and current developmental theories suggest that changes take place at a far more subtle level than this and the aim of this study was to ensure that any such changes are recorded, whilst being aware of the possibility of a testing effect. It was therefore decided, in this longitudinal study, to collect data on children's alcohol beliefs and expectancies and on their alcohol advertisement knowledge on a six monthly basis which would be frequent enough to capture the evolution of these ideas, but sufficiently far apart as to avoid a test effect.

Whilst this frequency of data collection would be ideal for tracking changes over time, in terms of modelling the data to investigate the potential long term effects of exposure to alcohol advertising in childhood such frequency was not necessary. Therefore, the data for modelling would be drawn from just three of the seven data collections, the first, the fourth and the seventh, i.e. at the beginning, the middle and the end of the study. This would provide data with 18 month time lags.

## **Design**

### *Changes over time*

To determine changes over time and to investigate differences arising from moderator variables such as gender, inferential and non-parametric tests were planned, e.g. t-tests, general linear modelling and correlational analyses. Whilst it was predicted that the findings would show changes in attitudes, beliefs and behaviours over the course of the study, these changes would be more time-related than specifically age-related.

It was decided that the investigation of the long term effect of exposure to TV alcohol advertisements in childhood merited an alternative method of analysis, one which could provide information on relationships between a number of variables over time. One method of analysis particularly suited to non-experimental data gathered in longitudinal studies is structural equation modelling, or SEM (Diamantopoulos & Siguaaw, 2000; Maruyama, 1998).

### *Structural equation modelling*

As a multivariate analysis technique, SEM provides the means to test not only relationships between variables, including mediating variables, through regression analysis, but also allows the researcher to test the overall structure of a model for goodness of fit, i.e. does the model accurately represent the data collected. In this way it is possible to establish whether the theoretical model is plausible and to establish the extent to which the predictor, and mediating and moderating variables

affect the dependent variable (Diamantopoulos & Sigauw, 2000; Maruyama, 1998; Statsoft, 2004).

Clearly, the question underlying the second aim of this longitudinal study is one of attributing causality: does greater exposure to TV alcohol advertising in childhood lead to more positive alcohol expectancies in adolescence? If this is the case, can the answer be found via structural equation modelling? In the past, structural equation models were often termed ‘causal models’; however, they are no longer referred to in this way as principally one is dealing with correlational data and therefore causality cannot be inferred (Cliff, 1983). Thus, caution should be exercised in inferring causality from a model. However, as data was collected over time in this longitudinal study then there may be some justification in suggesting that effects might be causal due to the timescale involved (Diamantopoulos & Sigauw, 2000; Maruyama, 1998). Nonetheless the suggestion by Diamantopoulos & Sigauw (2000) that the term ‘directional relationship’ is more appropriate than ‘causal relationship’ is one that will be adopted in this thesis.

A vital aspect of structural equation modelling is model conceptualisation, or the correct identification of the model, from both the point of view of the variables to be included and the interrelationships between these variables. In addition to the independent and dependent variables, there may be effects of mediating and moderating variables. Mediating variables are those which can account for the relationship between the independent and dependent variables, i.e. they are causal, whilst moderator variables can affect the direction and strength of relationships, e.g. gender differences. Based on research to date, as presented earlier in this chapter, the variables for the structural equation were defined as follows:

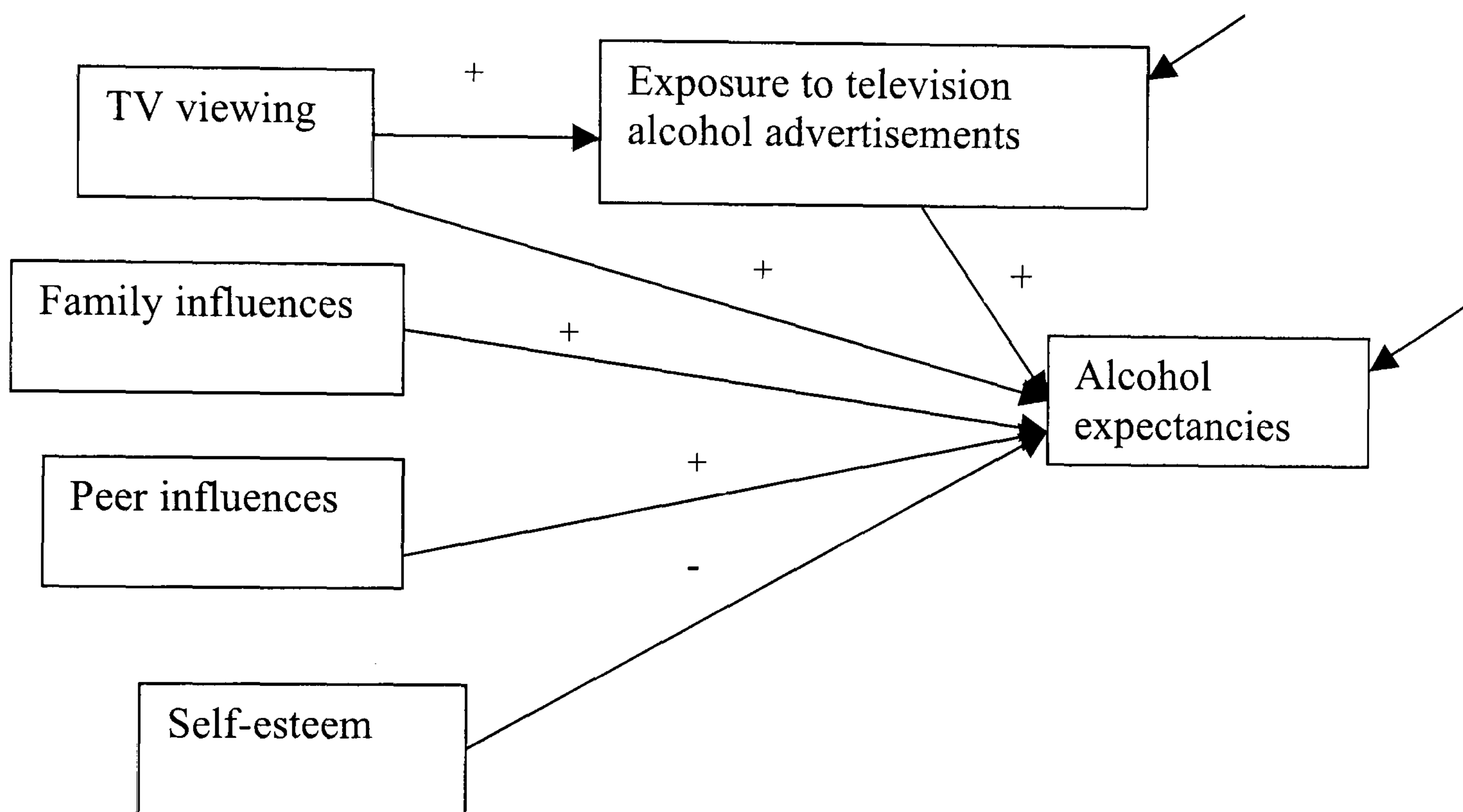
- Dependent variable: measure of alcohol expectancies
- Independent, or predictor, variables:
  - family influences
  - peer influences
  - television viewing
  - self-esteem (IAM)
- Mediating variable: exposure to alcohol advertising on television.



- Moderator variables:
  - gender
  - whether the child watched alone or with an adult
  - personal experience with alcohol

The relationships between the dependent variable, the predictor variables and the mediating variable are set out in the path diagram of a recursive model in Figure 5.1.

**Figure 5.1. Path diagram of predictor and mediating variables on alcohol expectancies**



In addition to modelling the data as in the path diagram, the effects of the moderating variables (gender, personal experience, lone viewing) were also to be assessed. Using data collected at the beginning, middle and end of the study meant that the potential influences (family, etc.) when children were 9 years old could be modelled against their alcohol expectancies at the age of 11 years and 13 years. Similarly, data from the same children at 11 years old could be modelled with their alcohol expectancies at 13 years. This latter model allowed for the detection of any effects of advertising starting at a slightly later age. Whilst the age differences suggest a two year gap between the first, fourth and seventh data collections, they are more

indicative of the minimum and maximum ages of the children taking part in the study. The time lag between these particular data collections was, as already indicated, 18 months.

It should be noted that whilst the model in Figure 5.1 is based on the literature as described earlier in this chapter, alternative models could also be considered, for example with the named variables taking different roles. However, in practical terms, in view of the scope of this thesis, only the models described will be explored.

As far as the second aim of the longitudinal study was concerned, it was predicted that, because of its prevalence on television, its attractiveness and advocatory nature, alcohol advertising seen by children, would be a contributor to their later positive alcohol expectancies. In other words, children with greater exposure to television alcohol advertising would have higher alcohol expectancies. This effect would be present even when modelled with other potential influences.

Having identified the dependent variable and potential influences on it, defined the aims of the longitudinal study and outlined the methodology involved, the next step was to evaluate existing measures that could be used for the study or to develop reliable and valid measures for the numerous variables involved. The following chapter describes the evaluation, development and piloting of instruments to measure, on repeated occasions, alcohol expectancies, television viewing, exposure to television alcohol advertising, perceived parent and peer attitudes and behaviours, personal alcohol experience, and self-esteem.

## Chapter 6

### **The longitudinal study: development of measures**

This chapter reports on the development and piloting of measures for the longitudinal study. Where available, existing measures were considered and evaluated. In some instances, they were piloted alongside newly developed measures in order to determine which was the most suitable for the purpose, i.e. a longitudinal study starting with children aged 9 years old. The aim was to produce four questionnaire booklets which could not only provide valid and reliable data, but also be self-completed by children of this age.

#### **Participants**

Forty-one children were recruited from two state primary schools in Hertfordshire for the pilot studies. The sample comprised a total of 20 girls and 21 boys from Year 5, with an overall mean age of 10 years 1 month ( $SD = 3.77$  months). The minimum age was 9 years 7 months and the maximum was 10 years 6 months at both schools. The schools were approximately equal in roll numbers. One school had a below average number of free school meals and their pupils' attainment on entry to reception was average. At the other school the number of free school meals was average and pupils' attainment on entry was well below average. Parents were informed of the nature of the study by letter and written consent was provided for all those children taking part.

#### **Procedure**

The questionnaires were all completed by the children on their own within the classroom, at a time convenient to the schools. General instructions were read aloud

to the class and the meanings of anonymity and confidentiality were explained to the children. The children were told that they were allowed to ask questions if they were not sure of anything and that they could ask for help with reading and understanding. A total of six questionnaires were piloted as two alternative questionnaires were trialled for both the self-esteem and alcohol expectancy instruments. Only one or two questionnaires were administered on any one day in view of the fact that the amount of time necessary to complete each one had yet to be ascertained. Furthermore, by limiting the number of questionnaires, the children's attention and enthusiasm was maintained and this was essential to establishing sound responses. The following section outlines the rationale behind each questionnaire and provides norms, and reliability and validity data for each one.

### **Booklet 1: Children's Alcohol Inventory (see Appendix F)**

This questionnaire was divided into two sections. In the first section questions were asked about alcohol expectancies and in the second section a variety of questions were posed relating to personal experience and perceptions of family and peer attitudes. In addition to the general instructions, it was made clear that no personal experience of alcohol was necessary in order to answer the questions in the booklet. The children were asked to consider alcohol vicariously, i.e. what are the effects of alcohol that they have noticed on television, in films, real life, etc.

#### **Section A: Alcohol expectancies**

As already discussed, one of the criticisms of many of the studies into children and young people and alcohol advertising is the poverty of the alcohol expectancy measure used. As, in this longitudinal study, the expectancy measure was to act as the dependent variable and to be measured repeatedly, a substantial and reliable instrument was required.

In view of this, a number of alcohol expectancy measures were considered. However, some were deemed too difficult for children to understand, e.g. The Comprehensive Effects of Alcohol (CEOA) (Fromme, Stroot, & Kaplan, 1993), and

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some were too adult in nature, e.g. AEQ-A (Brown, Christiansen et al., 1987). A further development of the AEQ-A is the Children's Alcohol-Related Expectancy (CARE) measure (Miller et al., 1990). However, this requires verbal delivery by the experimenter and, in its original form, the use of puppets. This measure was discounted on several grounds: firstly, it would not have led to the proposed self-completed questionnaire format, secondly, it would not have been suitable for when the participants reached the age of 12 and 13 and, thirdly, it had been criticised as possibly increasing expectancies due to the use of the puppets (Wiers, Sergeant, & Gunning, 2000). As a result two alternative alcohol expectancies measures, AEQ-C1 and AEQ-C2, were constructed and piloted.

Unlike the original AEQ and AEQ-A which have dichotomous response scales, both of the piloted measures used a four point Likert scale. Aas (1993) found that four response categories in his expectancy scale provided greater internal consistency than a two response scale, whilst Fromme & D' Amico (2000) found that four response points allowed "for the detection of smaller changes in expectancies than the dichotomous format of ..." (p.209). Moreover, increased response points were considered more appropriate and suitable for children whose beliefs and opinions of alcohol were still developing and who may not be certain about the effects of alcohol. Thus, children were able to choose between "No, that's wrong", "That's probably wrong", "That's probably right", or "Yes, that's right". Weights, or scores, of 1 to 4 were assigned to the responses with 4 being the most positive.

The first newly developed questionnaire, AEQ-C1, was a composite scale comprising 26 statements. These were based on statements in existing alcohol expectancy measures such as the Aas (1993) scale, the CEOA (Fromme et al., 1993) and the original AEQ-A (Brown, Christiansen et al., 1987). The statements were chosen as representative of the seven sub-scales identified as important to an alcohol expectancy score (Brown, Christiansen et al., 1987), namely: global, social, relaxation and tension reduction, arousal, cognitive improvement, cognitive impairment and sexual behaviour. For example, "People are more relaxed when they have been drinking alcohol" was representative of the relaxation subscale, and "People find it easier to talk to other people when they have been drinking alcohol" was one of four statements of the social facilitation subscale. Whilst the original

scale was quite explicit in terms of sexual enhancement, it was decided to rephrase these statements in a more romantic context in view of the age of the participants, e.g. "People feel sexier after a few alcoholic drinks" was replaced with "People feel more romantic when they have been drinking alcohol". The other piloted alcohol expectancy questionnaire, AEQ-C2, comprised 27 statements, used the same subscales and was very closely based on the Aas (1993) adaptation of the original AEQ-A. Having originally been developed in Norway for use with young adolescents, the version piloted in this study was slightly modified to suit younger and English-speaking children. As only positive alcohol expectancies have been associated with the ability to predict abuse, both scales comprised largely positive statements; however, four negative statements were included, as in the Aas scale, and these were reverse scored.

As a result of the lower reading abilities of School 2, and consequently the amount of time necessary to complete the questionnaire, it was decided to pilot at both schools only the AEQ which achieved the best reliability at School 1. Reliability for the scales at School 1 was tested with coefficient alpha: AEQ-C1 achieved a reliability figure of  $\alpha = .62$ , whilst AEQ-C2 achieved a reliability figure of  $\alpha = .43$  ( $n = 26$ ). The subsequent pilot study of the AEQ-C1 with the whole sample ( $n = 41$ ) found good reliability,  $\alpha = .82$ , but some questions had comparatively low corrected item total correlations. After revisions, the final AEQ-C comprised 21 statements (see Table 5.1). This was then re-assessed with participants from School 1, and the following are, therefore, norms, validity and reliability assessments for the final alcohol expectancy questionnaire with  $n = 24$ .

**Table 5.1. Statements for evaluation on the children's alcohol expectancy scale**

Item	Statement
1	Most people become happy when they drink alcohol.
2	People drink alcohol to help them relax.
3	People are funnier when they drink alcohol.
4	People find it easier to talk about feelings when they drink alcohol.
5*	People forget to do things when they drink alcohol.
6	People worry less when they drink alcohol.
7*	People who have been drinking feel like they can boss other people around.
8	People find it easier to talk to someone they are attracted to when they drink alcohol.
9	People come up with bright ideas when they have been drinking alcohol.
10	People are more relaxed when they have been drinking alcohol.
11*	People become loud and noisy when they have been drinking alcohol.
12	People join in with others and have more fun when they have been drinking alcohol.
13*	People do silly or stupid things when they have been drinking alcohol.
14	People find it easier to talk to other people when they have been drinking alcohol
15	People are more brave and daring when they have been drinking alcohol.
16	People feel more romantic when they have been drinking alcohol.
17	Adult parties become more fun when there are alcoholic drinks there.
18	Drinking alcohol makes people feel more interesting.
19	People feel more alert (awake and clearheaded) after drinking alcohol.
20	People think alcoholic drinks taste good.
21	People get on better with others when they have been drinking alcohol.

*Possible responses and scores: No, that's wrong (1); That's probably wrong (2); That's probably right (3); Yes, that's right (4)*

*\* reverse scored*

### *Norms*

The minimum possible score was 21 and the maximum was 84. The mean alcohol expectancy score was 50.63 (SD = 7.93) and the distribution was negatively skewed (-.426).

### *Reliability*

Reliability was tested using the internal consistency method giving a Cronbach's alpha of .72 for 21 items (n = 24).

### *Validity*

All the subscales were positively and reliably correlated with the total AEQ score, except those two where scores were reversed – arousal and cognitive impairment. The questions were examined for convergent and discriminant validity by correlation with their own sub-scale and with the other sub-scales. All but two questions were better correlated with their own sub-scale than with any other. Pearson correlations with their own scale ranged from  $r = .435$  to  $.506$ . Questions 6 and 14 both correlated better with the romance subscale than with their own sub-scales (relaxation and social respectively). However, as an overall measure of alcohol expectancy is required this was not regarded as a problem (Lamp, Price, & Desmond, 1989).

The final alcohol expectancy measure, Alcohol Beliefs and Expectancies in Childhood (ABEC), can be found in Appendix F. In view of the importance of this particular measure to the study, it was decided to assess dimensionality, reliability and validity of the scale throughout the period of the longitudinal study. The results of these assessments can be found in Chapter 6.

## **Section B: Environmental influences**

In the second section of the Children's Alcohol Inventory, children's own experience of alcohol was examined, together with their personal predictions for alcohol consumption as adults and their perceptions of parental and peer attitudes and behaviours. Questions in this section drew on previous studies by a variety of



researchers (Aitken, Eadie, Leather, McNeill, & Scott, 1988; Grube & Wallack, 1994; Wyllie et al., 1998). Most of the questions relied on a Likert type scale and required responses related to frequency, quantity or evaluation. The aims, questions, norms and reliability assessments are given in the following section.

***Personal experience with alcohol experience***

This measure comprised two questions. One aimed to evaluate children’s familiarity with alcohol and the other to establish their way of thinking about alcohol in the future (see Table 5.2).

**Table 5.2. Summary of questions relating to personal experience and predictions**

<b>Item</b>	<b>Question</b>	<b>Response and score</b>
1	Have you ever tasted an alcoholic drink?	I have never tried a drink (0) I’ve had a sip (1) I’ve had more than one sip, but not a whole drink (2) I’ve had a proper alcohol drink, a whole drink, not just a sip. (3)
2	Now think about the future, when you’re an adult of about 20 yrs old. Tick the box that best describes how often you think you will probably drink alcohol then?	Almost every day (5) At least once every few days (4) Once a week (3) Once or twice a month (2) Once or twice a year (1) Not at all (0)

The mean response for the first question was 1.93 (SD = .93) and the mode was 3, suggesting that most children had tried some alcohol (“sip or sips but not a whole drink”). Only 2 children in the pilot sample had not tasted alcohol. The mean response with regard to predicted drinking when aged 20 was 3.44 (SD = 1.4) suggesting that some children thought that they would be drinking regularly as adults.

## *Parental influence*

Parental influence was established by means of three questions to assess children's perceptions of their family's attitudes and behaviours towards alcohol (see Table 5.3). The question concerning "the adult in your home who drinks an alcoholic drink most often" was phrased so that it could refer to either parent or even an older sibling.

**Table 5.3. Summary of questions relating to parental and family influence**

<b>Item</b>	<b>Question</b>	<b>Response and score</b>
1	How do you think your parents would feel about you drinking an alcoholic drink at the age you are now?	Very unhappy (1) Unhappy/not OK (2) Happy/OK (3) Very happy (4)
2	How do you think your parents would feel about you drinking an alcoholic drink when you are 20 years old?	Very unhappy (1) Unhappy/not OK (2) Happy/OK (3) Very happy (4)
3	Now, think about the adult in your home who drinks an alcoholic drink most often. Please choose one of the following list that best describes how often you think that he or she probably drinks alcohol.	Almost every day (5) At least once every few days (4) Once a week (3) Once or twice a month (2) Once or twice a year (1) Not at all (0)

Responses to the first two questions produced means of 2.02 (SD = .96) and 3.08 (SD = .63) suggesting that children were aware that their parents would be less approving of drinking at the younger age. Perceived parental attitude to drinking was calculated by summing the responses to questions 1 and 2, giving a total score out of a possible score of 8. Responses to the question on perceived adult alcohol behaviour produced a mean response of 3.5 (SD = 1.13) with a mode of 4 (indicating drinking "at least once every few days). Whilst originally the intention had been to create a 'family influence' score from these 3 measures, poor scores for internal consistency on such a measure ( $\alpha = .35$ ) suggest that it would be preferable to keep

the attitude and behaviour scores separate, despite the behaviour measure only comprising one question.

### *Peer influence*

A measure of peer influence was assessed by three questions. Two questions were aimed at children's perceptions of their peers' attitudes towards alcohol whilst a third sought to establish their beliefs about their closest friend's drinking behaviour (see Table 5.4).

**Table 5.4 Summary of questions relating to peer influence**

Question	Response and score
1 How do you think your friends would feel about you drinking an alcoholic drink at the age you are now?	Very unhappy (1) Unhappy/not OK (2) Happy/OK (3) Very happy (4)
2 How do you think your friends would feel about you drinking an alcoholic drink when you're 20 years old	Very unhappy (1) Unhappy/not OK (2) Happy/OK (3) Very happy (4)
3 How often do you think that your closest friend has had an alcoholic drink in the last year?	Probably not at all (0) Probably he/she may have had a sip or sips, but not a whole drink (1) Probably once or twice in the last year (2) Probably once or twice a month (3) Probably once a week (4) Probably at least once every few days (5)

Responses to the first two questions for perceived peer attitudes produced mean scores of 2.51 (SD = .1.02) and 3.35 (SD = .66) suggesting it is clear that they see their friends as being more approving than their parents. Perceived peer attitude to drinking was calculated by summing the responses to questions 1 and 2, giving a total score out of a possible score of 8. A question about children's perceptions of

their closest friend's drinking behaviour produced a mean of 1.37 (SD = 1.33) with a mode of 1 suggesting that most children think their friends have just had a sip of alcohol in the last year. As with the 'family influence' score, it was decided to maintain the peer attitude and behaviour measures separately.

### ***Reliability***

Internal consistency estimates of reliability were calculated on parent and peer attitude questions. Coefficient alpha calculated on the parental attitude now and at the age of 20 with  $n = 38$  was  $\alpha = .61$  ( $q = 2$ ), and for the peer attitude with  $n = 39$  it was  $\alpha = .57$  ( $q = 2$ ).

### ***Evaluation***

The Children's Alcohol Inventory engaged the children's attention and was accessible for them. It took children from 15 to 25 minutes to complete it. Only minor vocabulary changes were necessary in order to increase comprehensibility in the alcohol expectancy scale.

## **Booklet 2: Television Viewing Habits Questionnaire (Appendix G)**

Based on a similar questionnaire from another study examining the effects of child-directed advertising (Pine & Nash, 2002), this instrument was designed to assess comparative viewing, rather than measure the number of viewing hours which can prove difficult with children. As a result, it provides a TV viewing score which varies according to (a) the amount of television watched generally, (b) the amount of commercial television watched and (c) the amount of sports programming viewed. In this way both the direct and indirect effects of television could be gauged. One section therefore concentrated on specific programmes on commercial television channels where data obtained from the broadcast advertising regulator indicated high levels of both alcohol advertising and children viewing. In another section children were asked about their sports viewing, both in terms of programmes on commercial

channels and dedicated television channels. The scores from the three sections were summed to provide a total TV viewing score.

**Table 5.5. TV viewing scores: measures, responses available and coding guide**

<b>Item Number</b>	<b>Measure</b>	<b>Question</b>	<b>Responses and scores</b>
Q4 to Q8	General TV viewing score	How often do you watch television in the evening during the week, Monday to Friday?  What about at the weekend, do you watch television on a Saturday afternoon?  Identical questions related to viewing on Saturday evening, Sunday afternoon and Sunday evening	Never (0) Just sometimes (3) A lot of evenings (4) Every evening (5)  Never (0) Just sometimes (1) A lot of Saturdays (2) Every Saturday (3)
Q13 (a)	Commercial TV viewing score	Do you ever watch the following programmes when they are on TV. Tick the box that is the best description of how often you watch each programme (1 tick per programme):  8 programmes on commercial television, (selected specifically - see text for criteria), e.g. Pop Idol, Emmerdale	Never (0) Just sometimes (1) Quite often (2) Always or nearly always (3)
Q13 (b)	Sports viewing score	Do you ever watch the following programmes when they are on TV. Tick the box that is the best description of how often you watch each programme (1 tick per programme)  3 sports programme (commercial TV – for selection method, see text)	Never (0) Just sometimes (1) Quite often (2) Always or nearly always (3)
Q14	Sports viewing score	Do you watch any sports channels?	Never (0) Sometimes (1) Quite a lot (2) A lot (3)

The piloted questionnaire formed a five-page booklet comprising 23 questions, the majority of which were multiple choice in format, as in Table 5.5 (see also Appendix G). Additional information sought in this questionnaire included demographic information, children's favourite adult programme and favourite advertisement, and whether they children watched television alone or in adult company. A final section attempted to gather a diary-style view of the children's viewing habits by asking about programmes that had been screened on television the previous evening.

### ***Evaluation***

The children coped well with completing this questionnaire. They found it easy to understand and complete. Only the diary-style view presented problems. This was on two accounts: firstly, children were found to be ticking programmes that they watched on a regular basis, rather than just those programmes watched the previous evening, and, secondly, discrepancies arose between schools as the questionnaires were administered on different days, meaning that the results were not comparable. For this reason it was decided not to incorporate this data. This questionnaire took between 15 and 25 minutes to complete.

### ***Norms***

All the children completed this questionnaire, therefore the sample size is 41. For a General viewing score, the summed responses of questions 4 to 8 produced a mean score of 11.93 (SD = 3.42) with a tri-modal distribution (8, 13 and 17). The maximum score possible was 17. The mean Commercial viewing score, calculated from the summed responses to the first eight programmes itemised in question 13, was 6.66 (SD = 3.22) with a mode of 6. The maximum score possible was 24. Summing the responses to the last three items in question 13 and the response to question 14 produced a mean Sports viewing score of 2.07 (SD = 2.31) and a mode of 1. The maximum possible score was 12.

A Total TV score was calculated by summing the General, the Commercial and the Sports viewing scores. This gave a mean Total TV score of 20.66 (SD = 4.92) with a mode of 20, a minimum score of 11 and a maximum of 32.

Thirty children (73%) stated that they watched evening television programmes with an adult generally. Twenty-four children (58.5%) stated that they often sat and watched advertisements on television. As would be expected, children went to bed later at weekends (Friday night and Saturday night) than during the week. While 71% said they went to bed at 8.30 or 9.00 during the week, 73% went to bed at 10.00 or later at weekends.

In response to the open question concerning their favourite programme, Eastenders was named by 15 children (36.5%). In second place came the programme Popstars, with four children (9.2%) nominating it. In response to the open question concerning favourite advertisements, 14 children either ignored this question (7), declared they had no favourite (5) or that they did not like advertisements (2). The most popular advertisement was the Budweiser advertisement, nominated as their favourite by four children (9.8%).

### ***Reliability***

Item analyses were carried out for the three individual television viewing scores. Pearson correlation coefficients between responses to questions 4-8 and the general tv viewing score were good, with correlations ranging between  $r = .661$ ,  $p < .01$  and  $r = .842$ ,  $p < .01$ . Internal consistency measures for these 5 items produced a coefficient alpha of .80. Likewise, good correlations were found between the two sports questions and the total sports viewing score ( $r = .755$  and  $r = .90$ ,  $p < .01$ ), and a coefficient alpha of .53 was computed for these two items.

Subscale analyses were carried out with the total viewing score using the Pearson correlation coefficient. The correlations between the total score and general tv viewing score was  $r = .58$ , commercial viewing score  $r = .48$  and sports viewing score was  $r = .60$ . All correlations were reliable,  $p < .01$ , 2 tailed.

### Booklet 3: Self-esteem Questionnaire (Appendix H)

Two instruments measuring children's self-esteem were piloted: the Harter Perceived Competence Scale (Harter, 1982) and a questionnaire based on one previously used successfully by the Wolke Group at the University of Hertfordshire (unpublished).

The Harter Scale comprises 36 statements in the following format (the statement is an example of one from the scale):

“Some kids think they could do well at just about any new sports activity they haven't tried before	BUT	Other kids are afraid they might <i>not</i> do well at sports they haven't ever tried.”
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Children are then asked to decide which of the two statements is most like them, and then to indicate how much it is like them by ticking boxes labelled either “Really true of me” or “Sort of true of me”. This results in a Likert type scale with four options. The scale assesses cognitive, social and physical domains together with a global scale of self-worth, and includes a measure of the importance of particular scales.

The other instrument piloted was based on one developed by the Wolke Group at the University of Hertfordshire (unpublished). This bipolar agreement scale assesses self-esteem in 4 domains by asking the children to indicate their self-assessment in relation to 16 statements relating to academic or cognitive abilities, physical ability and attributes, social ability and child/parent relationships. Using simple statements in the first person, one positive and one negative, at each end of a vertical scale of 25 ‘faces’ (see Figure 5.2), children are required to indicate where on the scale they considered themselves to be. A comparable example to the Harter scale statement mentioned above is “I learn new sports and games quickly” and “I am slow at learning new sports and games”. Previous studies by the Wolke Group had found good reliability and validity with this instrument, and scales similar to this have been used with children previously by other researchers (e.g. Ahlgren, 1983). Each question was scored on a range of 1 to 25 with a score of one for the most negative





Norms, reliability and validity assessments are therefore only given for the IAM questionnaire. However, the concurrent validity of the two instruments was assessed where children had completed both questionnaires ( $n = 24$ ) and these figures are given below under construct validity.

### ***Norms***

The mean score for the IAM scale was 304.7 ( $SD=64.69$ ) with a minimum score of 105 and a maximum of 395,  $n = 41$ . The scores produced a negatively skewed distribution with two modes (335 and 376).

### ***Reliability***

Assessment of internal consistency of the IAM Questionnaire using Cronbach's alpha found reliability to be good,  $\alpha = .8656$  ( $n = 41$ ) with correlations of between .2 and .7. Item analysis of the entire scale found all items to be significantly correlated with the total score, with Pearson correlation coefficients ranging from .38 to .81. Good reliability was also found on individual sub-scales with Cronbach's alpha testing for internal consistency: academic = .5971, physical = .6020, social = .8449, child/parent = .7736.

### ***Validity:***

#### ***Construct validity/Concurrent validity***

Twenty-four children completed both self-esteem questionnaires. Using the Pearson correlation coefficient, construct and concurrent validity was assessed. A positive and reliable correlation was found between the Harter scores and the IAM scores,  $r = .831$ ,  $p < .01$ . A further correlation was carried out between the global worth scale mean score of the Harter scale with the overall mean scores of the IAM scale. This too found a positive and reliable Pearson correlation,  $r = .622$ ,  $p < .01$ , suggesting that the instrument is an acceptable alternative to an established questionnaire as it is more accessible to children, is quicker and easier to administer and has a correlation with the alternative scale that is "moderately high, but not too high" (Anastasi, 1990 p.154).

### ***Convergent and discriminant validity***

These validities were assessed using Pearson correlation coefficients. There were no problems with the convergent validity of each sub-scale with the lowest correlation being  $r = .528$ ,  $p < .01$  ( $n = 41$ ). In terms of discriminant validity, one item was found to be more highly correlated with another scale than with its own. This was Q6 (I learn new sports and games quickly / I am slow at learning new sports and games): this correlated slightly more highly with the social scale than with the physical scale. However, this is not regarded as a problem, as an overall assessment of self-esteem is required.

### ***Size of scale***

Although the scale had proved itself with regard to reliability and validity, the large size of the scale (1-25) was such that sensitivity may be reduced. Whilst a reasonably large scale may increase sensitivity, too many options may leave the children confused as to the difference between scores (Heiman, 1999). Therefore, after reducing the size of the scale by decreasing the number of faces from 25 to 9, the instrument was subjected to test-retest reliability checks for temporal stability. A total of 25 children from School 1 took part with a two-week interval between tests. The distributions of scores were again negatively skewed with mean scores for the scale of 115.28 (25.91) at T1 and 111.8 (27.99) at T2. Pearson correlation coefficients between individual questions at time 1 and time 2 were found to be positive and reliable and ranged from  $r(tt) = .75$  to  $r(tt) = .96$ ,  $p < .01$  ( $n = 25$ ). The overall correlation between the summed scores for each time of administration was  $r(tt) = .96$ ,  $p < .01$ . In terms of internal consistency, the scale on both administrations had a coefficient alpha of .93. As a result it was decided to use this scale for the duration of the longitudinal study.

## **Booklet 4: Television Advertisement Awareness Questionnaire (Appendix I)**

As indicated in the introduction, advertisement recall has been positively associated with measures of susceptibility to drinking and alcohol use and abuse (Unger et al.,

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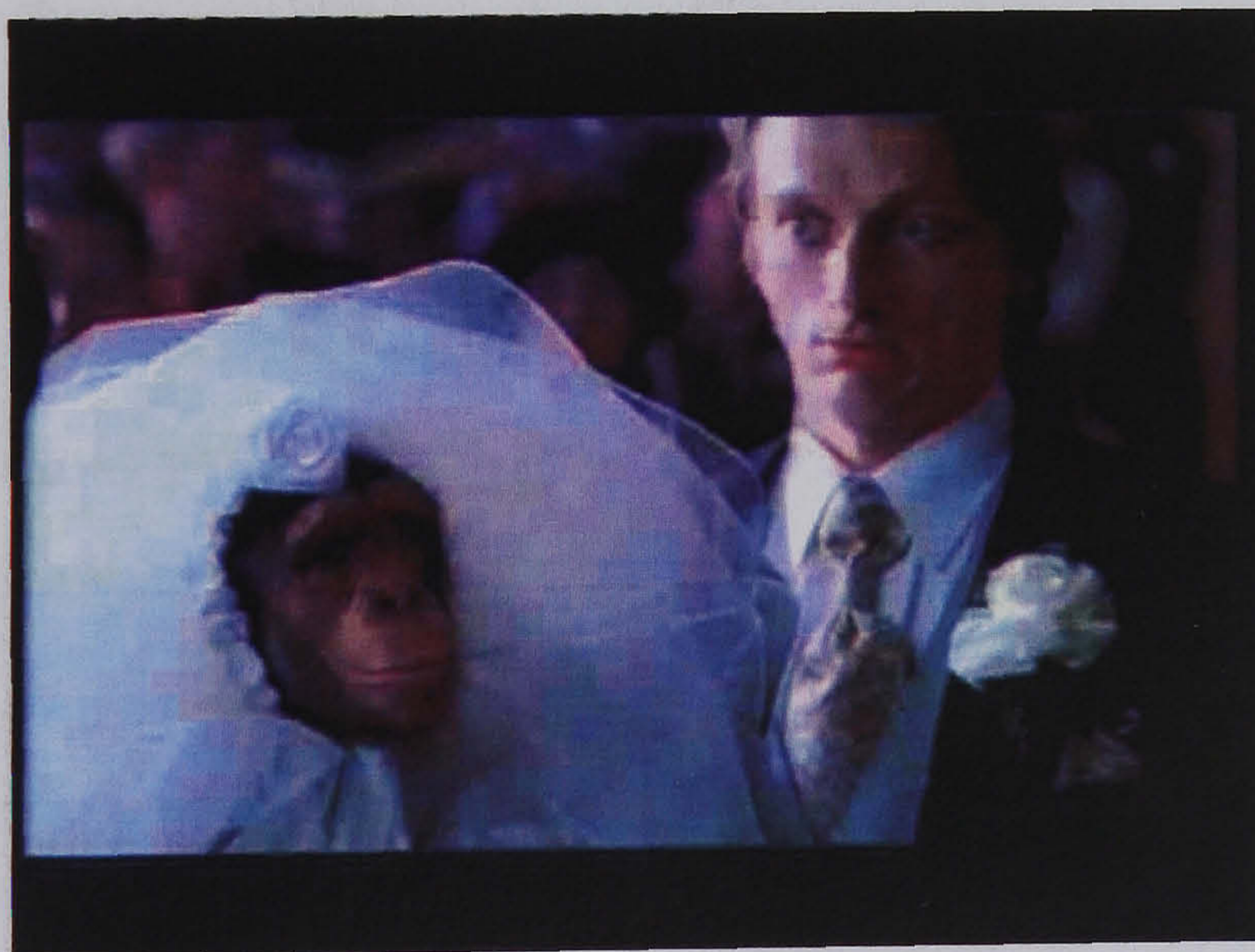
2003). This questionnaire was therefore designed to assess children's attention to and knowledge of advertising.

Video recordings were made of the two terrestrial TV channels only (ITV1 and Channel 4) during evening television on weekdays and afternoon and evening television at weekends. Stills were taken from selected advertisements screened during these times. Advertisements were chosen portraying both alcoholic and non-alcoholic products, e.g. Budweiser and Ferrero Rocher chocolates, in order to be able to assess both alcohol advertisement knowledge and how it relates to general advertisement knowledge. In the pilot there were 6 alcohol and 8 non-alcohol advertisements. This inequality was due to a lack of alcohol advertising in the post-Christmas season. As responses in this instance were assessed on a percentage basis, this did not affect the overall results, but future advertisement questionnaires would seek to ensure equal numbers of alcohol and non-alcohol television commercials. Previous research has highlighted gender differences in responses to alcohol advertising (Connolly et al., 1994; Covell, 1992), however, this may be artefactual as beer commercials are frequently chosen for research. Therefore attention was paid in this study to including commercials that were likely to appeal to girls as well as boys, e.g. Budweiser and Archer's Aqua. The final questionnaire comprised 8 pages including an instruction sheet with stills from two advertisements per page, one for an alcoholic drink and the other for a non-alcohol item in a non-child directed advertisement.

As highlighted in Chapters 1 to 4, the role of different levels of knowledge must not be ignored as far as children and advertising are concerned. Studies indicate that advertising has an impact on both implicit and explicit memory (Perfect & Askew, 1994), and explicit memory in the form of recall of brand names frequently underestimates the non-brand specific effects of advertising (S. Shapiro & Krishnan, 2001). The aim for this questionnaire, therefore, was to create measures of implicit, pre-explicit and explicit advertisement knowledge and awareness. As indicated in Chapter 1, 'implicit' refers to knowledge which children hold at a rudimentary level and which is not available for verbal report. Pre-explicit refers to the level of knowledge where some information has been abstracted, but it is limited in scope and not explicit (Pine & Messer, 1999), and finally, 'explicit' is a level of knowledge

which is accompanied by understanding and availability for verbal report. As a result, children were asked three questions about each advertisement: (a) had they seen the advertisement, (b) what type of product it was for and (c) could they remember the name of the product (see Figure 5.3 for an example). Consequently, it offered a general recognition test (implicit knowledge), but one that nevertheless acknowledges that children may not have seen particular advertisement. By asking about the *type* of product being advertised, children were given the opportunity to display their knowledge (pre-explicit), even if they were unable to recall the product's brandname (explicit knowledge). For brevity, 'pre-explicit' knowledge will be referred to as 'pre-exp' in tables in subsequent chapters. Previously, studies have explored recognition and recall, but frequently they have been presenting children with only alcohol advertisements (e.g. Aitken, Leather et al., 1988; Grube & Wallack, 1994) which enhances the recognition possibility. One point was allocated for each question, therefore a maximum score of 3 was possible for each advertisement.

**Figure 5.3. Example of question from the TV Advertisement Awareness Questionnaire**



Have you seen this advert? Yes  No   
Type of product  
Name of product

### ***Evaluation***

The children found this questionnaire engaging and were able to complete it in 10 to 15 minutes.

### ***Norms***

All children in the pilot study completed this questionnaire, therefore  $N = 41$ . With 3 possible points per advertisement and 14 advertisements, the total possible score for this questionnaire was 42. The overall mean score was 18.78 (7.65) with a minimum score of 6 and a maximum score of 31. Breaking down the advertisements into alcohol products and non-alcohol products gave mean scores of 5.56 (3.69) and 13.22 (4.71) respectively. However, it is important to note that the maximum possible score for the alcohol products was, at 18, less than that for non-alcohol products, which was 24. When considered as percentages, 30.88% of alcohol advertisements were recognised and recalled when compared to 55.08% of non-alcohol advertisements. Whilst total scores will be evaluated in the longitudinal study, separate scores for implicit, pre-explicit and explicit knowledge will also be considered.

### ***Reliability and validity***

Summed scores for each advertisement were created and coefficient alphas were calculated as internal consistency estimates of reliability for both the alcohol advertisements (6 items) and the non-alcohol advertisements (8 items). This produced coefficient alphas of .68 and .77 respectively.

## **Outcome**

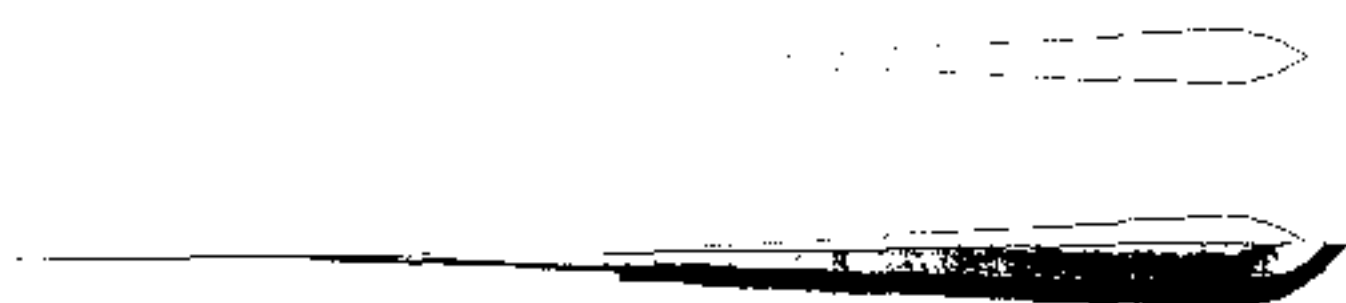
The instruments developed and described in this chapter represent a comprehensive bank of measures encompassing children's alcohol expectancies and a wide range of potential influences on these expectancies. The measures not only build on previous work (Aas, 1993; e.g. Brown, Christiansen et al., 1987; Grube & Wallack, 1994; Wyllie et al., 1998), but incorporate features that recognise the nature of knowledge development in children.

This developmental aspect to the measures can be seen in a number of ways. For example, the ABEC scale in the Children's Alcohol Inventory assesses alcohol beliefs and expectancies in children as young as 9 years old using a Likert scale. This takes into consideration the fact that their knowledge of alcohol may not yet be at an explicit level and contrasts with the adolescent version of the AEQ (Brown, Christiansen et al., 1987) which offers a simple dichotomous scale. The Ideas About Me (IAM) scale provides a reliable and valid alternative self-esteem measure to the Harter Perceived Competence Scale (Harter, 1982). Although widely used, the Harter scale was not well received by the children in this pilot study. Instead, children found that the simple 9 point faces scale and statements set in the first person, as in the IAM scale, were far easier to understand and complete. Finally, in the TV Advertisement Awareness Questionnaire provision is made for children to display the full extent of their knowledge through measures which assess implicit, pre-explicit and explicit levels of knowledge, unlike previous studies where only implicit, explicit or both have been researched (e.g. Grube & Wallack, 1994). At the same time, the questionnaire also considers children's awareness and knowledge of alcohol advertising when compared to non-alcohol advertising. This not only removes the bias found when presenting only alcohol advertisements for recognition, but also allows for evaluation of any differences in children's responses to the two types of advertisement.

The findings from the pilot study were very positive with the production of four new measures suitable for use with this young age group. The children responded well to what was being asked of them and the results indicated a good range of responses and sufficient variance to provide valid measures. As a result, the following four valid and reliable questionnaires were established for the longitudinal study:

- The Children's Alcohol Inventory
- TV Viewing Habits Questionnaire
- IAM Questionnaire
- TV Advertising Awareness Questionnaire.

As in the pilot studies, it was decided to administer only two questionnaires per day rather than all four in the main study. This was not only beneficial in terms of arranging visits to schools as less time would be needed at any one time, but it was



also, importantly, a way of ensuring that children's enthusiasm for completing the questionnaires was maintained.

An additional outcome of the analysis of the data means that revisions to the path model are necessary to include separate variables for attitude and behaviour for both family and peers. A refined model with these revisions can be found at the beginning of Chapter 8.

With the measures for the longitudinal study validated, the next stage was to recruit schools and a group of children to participate in the study on a long term basis. This, together with reports of changes over time in children ideas, beliefs and knowledge, is described in the next chapter.



## Chapter 7

### **Longitudinal Study: Changes over time in ideas and beliefs**

The first aim of the longitudinal study was to investigate how children's beliefs, expectancies and perceptions of alcohol change over time as they move from pre-adolescence to early adolescence and how this relates to changes in children's awareness of television alcohol advertising over the same period. Together the data would provide a hitherto unresearched view of children's attitudes towards alcohol and television alcohol advertising.

As indicated in Chapter 5 and 6, alcohol advertising is just one of a number of potential influences on positive alcohol expectancies. Therefore, in this chapter, the findings are reported for children's alcohol beliefs and expectancies, i.e. their ABEC scores, their perceptions of family and friends' behaviour and attitudes, their own experience with alcohol and how they foresee themselves drinking in the future. Television viewing habits are also reported, as are measures of exposure to alcohol advertising and self-esteem. Changes are tracked over time and related to developing alcohol expectancies to see how their development occurs and interacts, and to evaluate whether moderating variables, such as gender, influence these changes.

Whilst this chapter is largely concerned with addressing the first aim of the longitudinal study, namely tracking changes over time, one question that arose from both aims of the study was that of sample size. Prior to establishing the study, this required consideration in order to provide reliable and robust results, particularly in view of the proposal to model the data. However, opinions of appropriate sample sizes for structural equation modelling appear to differ considerably. For example, Stevens (1996) suggests it is important to have a minimum of 15 cases per variable, whilst Bentler and Chou (1987) recommend at least 5 cases per parameter estimate

including error terms, and findings by Ding, Velicer & Harlow (1995) suggest a minimum sample size of 100 to 150. At the other end of the scale there are researchers who suggest that covariance structure modelling should only be carried out on sample sizes of 200 or more for accuracy (e.g. MacCallum, Browne, & Sugawara, 1996). Whilst large sample sizes increase power and reliability, the practicalities and limitations of having just one researcher in terms of the validity of responses needed to be taken into consideration. For example, it was important that responses to the Television Advertising Awareness Questionnaire were made within a particular timeframe to ensure that the delay between seeing an advertisement on television and being shown it in the questionnaire was equal for everyone. In setting up the following study, therefore, it was decided to recruit the largest sample possible within the range of minimum recommendations which, with eight variables, or ten parameters in the revised path model, meant that the sample size needed to be in the range of 50 to 150 children (Bentler & Chou, 1987; Ding et al., 1995; Stevens, 1996). Such a sample size would also provide robust data for analyses of changes over time.

The following method section describes how the longitudinal study was established and conducted over all seven data collection points. Before reporting the findings of the main measures, consideration is given to the attrition rate over the period of the study and how missing data were managed. In the discussion the changes over time are summarised and assessed in relation to previous studies and to current developmental theories.

## **Method**

### **Participants**

As indicated in Chapter 5, children for the main longitudinal study were recruited from Year 5. Middle schools in Bedfordshire were approached and headteachers were informed by letter of the nature of the study. Two state-run middle schools, willing to participate in the study, each selected 3 classes for inclusion. The two schools were similar in that they both had 4% children eligible for free school meals.

School 1 was a larger than average middle school based in the centre of a rural town with a local catchment area. School 2 was larger than most middle schools and was based in a village; as a result it had a far wider catchment area.

Parents were informed of the study by letter which included a consent form. A total of 174 letters were sent home with the Year 5 pupils and, of these, 128 consent forms were returned (73.5%). The parents of 4 children declined consent on religious grounds, and 1 child was absent for the first two data collections. As a result 123 children in total were recruited from the two schools. The sample comprised 63 boys and 60 girls with an overall mean age of 10 years 4 months (SD = 3.32mths) at the beginning of the study. The youngest child was 9 years 11 months and the eldest was 10 years 10months. By the time of the final data collection the children were in Year 8 and were 12 or 13 years old.

## **Materials**

The materials comprised the four questionnaire booklets developed for the study, as described in Chapter 6. In Table 7.1 the measures in each booklet are identified.

At each of the seven data collections, stills for the TV Advertisement Awareness Questionnaire (see Appendix I) were taken from advertisements being screened during non-child directed programmes (e.g. from 6 to 9 pm) at the time of the collection. Similarly, the programmes mentioned in the commercial and sports measures in the TV Viewing Habits Questionnaire (see Appendix G) were chosen as representative of the time and, as with the pilot, of being programmes during which alcohol advertisements were shown and children were known to be watching (e.g. Pop Idol, Emmerdale) according to data supplied by Ofcom, the broadcast advertising regulator.

**Table 7.1 Longitudinal study data collection booklets and measures**

<b>Questionnaire/Instrument</b>	<b>Measure</b>
<b>Children's Alcohol Inventory</b>	Alcohol Beliefs and Expectancies in Childhood (ABEC) Personal experience with alcohol Predictions Perceptions of adult attitude Perceptions of adult behaviour Perceptions of peer attitude Perceptions of peer behaviour
<b>TV Viewing Habits Questionnaire</b>	TV viewing scores (adult programmes) - General - Commercial - Sports  Lone/co-viewing Favourite programmes/advertisements Demographic information
<b>IAM – Self-esteem Questionnaire</b>	Self-esteem score (global)
<b>Television Advertising Awareness Questionnaire</b>	Measures of different levels of knowledge of alcohol and non-alcohol advertisements: implicit (recognition), pre-explicit (type) explicit (brand)

One finding from both the pilot and the first data collection suggested that data should be collected from children with regard to whether, and how frequently, they watch the fictional programme, EastEnders. EastEnders is a continuing serial, or soap opera, set in the East End of London and is on four times a week at 7.30 p.m. or 8.00 p.m. From responses to the question about favourite adult television programmes, it appeared to be particularly popular with this age group and scenes inside the local public house are frequently used. All the other continuing serials, or soap operas, such as Coronation Street and Emmerdale were already included in the commercial viewing section, whereas EastEnders is broadcast on the non-commercial BBC1 channel. As a result, a measure of the frequency of EastEnders viewing was taken in the second data collection and it was added to the list of commercial programmes on the TV Viewing Habits questionnaire for fourth and

seventh data collections. The data for this was analysed separately and was not included in the commercial viewing score.

## Procedure

Data was collected at six-monthly intervals, in January and in July. In the following results sections each of these data collections is referred to in an abbreviated form by its chronological order, e.g. the first data collection is referred as T1, the second T2, etc. At T6, due to technical difficulties, the January collection was delayed until February. Two questionnaires, the Children's Alcohol Inventory and the TV Advertising Awareness Questionnaire, were administered on all 7 occasions. This meant that changes in alcohol beliefs and advertisement knowledge could be tracked closely, and thus allow for the identification of periods of change. However, the Television Viewing Habits Questionnaire and the IAM scale were administered only at times 1, 4 and 7, which provided the necessary data for modelling, but without excessive imposition on the participating schools. A plan detailing the frequency of questionnaire administration can be found in Table 7.2.

**Table 7.2 Data collection points**

Questionnaire	T1 Year 5 Jul 9-10y	T2 Year 6 Jan 10-11y	T3 Year 6 Jul 10-11y	T4 Year 7 Jan 11-12y	T5 Year 7 Jul 11-12y	T6 Year 8 Feb 12-13y	T7 Year 8 Jul 12-13y
Children's Alcohol Inventory	✓	✓	✓	✓	✓	✓	✓
TV Advertising Awareness Questionnaire	✓	✓	✓	✓	✓	✓	✓
TV viewing habits Questionnaire	✓			✓			✓
IAM Self-esteem scale	✓			✓			✓

For the majority of data collections, a classroom was allocated away from children not taking part in the study. On approximately 6 occasions children completed the questionnaires in their classroom whilst children not participating in the study read library books. At School 2 the last two data collections only, T6 and T7, were undertaken by form tutors due to difficulties in gathering the participating children in one place; however, as the children had previous experience of the questionnaires this was not deemed to be a problem and clear written instructions were provided for the tutors. In order to maintain the confidentiality of children's responses for these two data collections, self-seal envelopes were provided for each child for their questionnaires.

Prior to the first administration of the questionnaires, it was explained to the participating children that the researcher proposed to re-visit them regularly with a view to understanding how their ideas and beliefs about a number of things, including television, alcohol, school, etc. change over time. On each subsequent occasion, as with the pilot study, the instructions for each questionnaire were read out and children were informed that they could ask questions if they did not understand. It was made clear to the participants that no personal experience of alcohol was necessary in order to complete the alcohol expectancy questionnaire. Children completed both questionnaires and then returned to their lessons.

At T1, T4 and T7, when all four questionnaires were administered, only two questionnaires were administered per day. For example, on the first data collection children completed the TV Viewing Habits questionnaire and the IAM self-esteem questionnaire on first day, and the remaining two questionnaires on another day. This ensured that the time required on each occasion was approximately the same. When only two questionnaires were being completed this required just one visit at each of the two schools. Normally all the questionnaires were administered within 1 week. Children who were absent for one of the visits were followed up.

## Results

The findings represent a substantial amount of data, therefore the following results section is presented in seven parts as follows:

- **Background data:** attrition, missing data, effect sizes and the reliability of the ABEC scale
- **Moderator variables:** descriptive reports on personal experience with alcohol, the viewing style of the sample (watch television alone or with adult), and the number of children who watch EastEnders regularly.
- **Descriptive statistics:** Table of means and standard deviations of the main longitudinal measures for the whole sample
- **Alcohol beliefs, expectancies and perceptions:** ABEC scores, predicted drinking habits, family and peer influences
- **Television viewing habits and advertising knowledge:** TV viewing scores, favourite advertisements and scores on Television Advertising Awareness questionnaires
- **Self-esteem:** IAM scores
- **Differences by school:** main measures analysed by school

Where appropriate, differences arising from gender and the other moderator variables will be reported.

### **Background data**

This section covers the attrition rate over the period of the longitudinal study, how missing data were managed and how effect sizes used in the results section should be interpreted. Finally, the reliability of the dependent variable, the ABEC scale, after all seven data collections is discussed and reported.

#### ***Attrition***

Whilst the initial sample size was 123, a number of children left the schools, either as a result of moving home or of moving to a private secondary school in the area. The

sample was further reduced on the final data collection due to a sudden bereavement at one of the schools, with the death of one of the Year 8 form tutors. The sample size decreased as follows: T1 n = 123; T2 n = 122; T3 n = 120; T4 n = 116; T5 n = 115; T6 n = 114; T7 n = 100. This represents a total attrition rate of 18.7% and comprised 11 boys and 12 girls. The sample sizes given in the results section vary in as far as any changes over time were analysed using listwise deletion and therefore included responses for 100 children only. However, for the purposes of evaluating the reliability of the Alcohol Beliefs and Expectancies in Childhood measure (ABEC), and for some of the analyses exploring changes at specific data collections, responses from the full sample available at that time were used. Thus, whilst factorial ANOVAs might have been useful for analysing much of the longitudinal data, under these circumstances deletion due to the reducing sample size would have resulted in loss of power for many analyses and increased the chance of a Type II error.

A comparison was made of the mean ABEC scores at T1 for those children who had left the study by the final data collection point and for those who completed all seven data collections. This ensured that the dropout rate did not affect the final outcome. With  $M = 43.30$  ( $SD = 6.73$ ) for those who left the study and  $M = 43.08$  ( $SD = 7.03$ ) for those who remained in the study, no significant differences in scores were found in an independent groups t-test ( $t(121) = .139$ , n.s.).

### *Missing data*

Where children left the study or did not complete the final data collection no further action was taken and the data was regarded as missing. However, nine children did not complete the Children's Alcohol Inventory and the Television Advertising Awareness Questionnaire on one occasion each. The missing data represents less than 1% of the total data. Rather than reduce the overall sample for all seven data collections by nine, as would occur with listwise deletion, the missing data were replaced with means calculated from the sum of the two data collections on either side of the missing data, e.g. individual ABEC scores at T1 and T3 were used to calculate a mean ABEC score at T2. In all cases the replaced figure met with the



natural progression in the child's scores. Listwise deletion was used for all other missing data.

### *Effect sizes*

Where effect sizes for changes over time are reported, these are given in terms of the multivariate partial eta squared statistic which traditionally equates .01, .06, .14 with small, medium and large effect sizes respectively (Green, Salkind, & Akey, 2000).

### *Reliability of the ABEC scale*

As indicated in the previous chapter, this measure was subjected to further tests in view of its importance to the study as the dependent variable. The data was thus subject at each data collection to analysis for dimensionality and reliability. Final inclusion in the measure was based on two factors: regular dimensionality in factor analysis and increasing positive scores. Dimensionality was assessed using principal components analysis. Whilst the original scale was designed to reflect the seven subscales identified in the literature, examination of both eigenvalues and the scree plot suggested that extraction of only three principal components was more appropriate on five out of seven occasions. Varimax rotation suggested three interpretable factors: fun, negative aspect and confidence in personal interaction. Factor analysis showed that these factors accounted for between 40.58% and 44.89% variance, with Kaiser scores ranging from .601 to .764. On three occasions responses to statement 19 ("People feel more alert (awake and clearheaded) after drinking alcohol") failed to load satisfactorily on any dimension, and on two occasions statement 15 ("People are more brave and daring when they have been drinking alcohol") also failed. Equally, mean scores on these two items decreased over time. Therefore, as the aim was to establish positive alcohol expectancy scores, items 15 and 19 were eliminated before final assessment. Two other items which had responses which decreased over time, statement 7 ("People who have been drinking feel like they can boss other people around) and statement 9 ("People come up with bright ideas when they have been drinking alcohol") were also removed. Responses to statement 20 also failed to load satisfactorily on three occasions; however, it did increase positively and as it was considered to be an important question ("People think alcoholic drinks taste good"), it was retained. A drawback to

removing statements 9 and 19 was that both related to cognitive improvement, belief in which has been shown to persist in late adolescent alcohol abusers with alcohol abusing parents (Brown, Creamer et al., 1987). Unfortunately, when dealing with group and aggregate data, however, very specific samples cannot be included. For example, including these statements in this instance would result in an overall decrease in scores on the ABEC scale. Further consideration is given to this later in the final chapter of the thesis.

After removal of questions 7, 9, 15 and 19, seventeen questions remained. Internal consistency measures of the final ABEC scale were calculated as estimates of reliability resulting in coefficient alphas of T1 = .73; T2 = .75; T3 = .67; T4 = .75; T5 = .75; T6 = .76; T7 = .77.

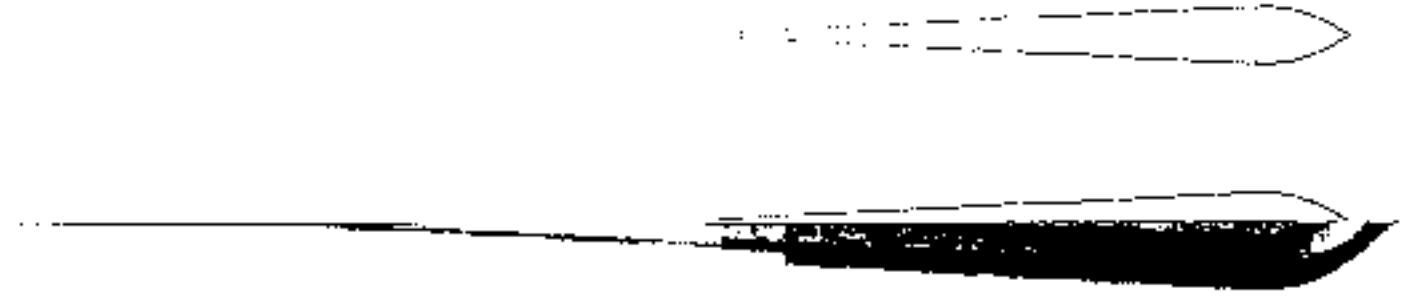
## Moderator variables

### *Personal experience with alcohol*

Many of the children had tried alcohol, even at T1 and this increased over time as Table 7.3 below indicates.

**Table 7.3 Children's personal experience with alcohol in frequencies and percentages**

	No experience	Sip of alcohol	More than one sip but not a whole drink	Has consumed a whole alcoholic drink
<b>T1 (n = 123)</b>	8 / 6%	42 / 34%	35 / 28%	38 / 31%
<b>T2 (n = 122)</b>	7 / 7%	37 / 30%	35 / 28%	43 / 35%
<b>T3 (n = 120)</b>	10 / 8%	28 / 23%	51 / 42%	31 / 26%
<b>T4 (n = 116)</b>	4 / 3.4%	21 / 18%	38 / 33%	53 / 45%
<b>T5 (n = 115)</b>	4 / 3.5%	15 / 13%	26 / 22%	70 / 61%
<b>T6 (n = 114)</b>	4 / 3.5%	15 / 13%	19 / 16%	76 / 66%
<b>T7 (n = 100)</b>	4 / 4%	13 / 13%	14 / 14%	69 / 69%



At T3 there appear to be some discrepancies between reports at this age and at earlier ages and this is difficult to account for, especially as the effect was similar at both schools. As this was the result of only a few children changing their reports, it may simply reflect a change in their understanding of alcoholic drinks. The frequencies on all the other data collections tend follow a progressive pattern.

### ***Lone viewing***

Whether children watched television alone or with an adult was investigated on three occasions only. The percentage watching alone was 39%, 22% and 33% at T1, T4 and T7 respectively.

### ***EastEnders viewers***

The EastEnders serial was popular with the children, with 62.6%, 72.4% and 68% saying that they watch it quite often or always at T2, T4 and T7 respectively.

## **Descriptive statistics**

Table 7.4 presents the means and standard deviations for all of the main measures in the longitudinal study at each data collection, i.e. means for the ABEC measure, family attitudes, family behaviour, peer attitudes, peer behaviour, TV viewing habits, alcohol advertisement knowledge (implicit, abstracted verbal and explicit) and the IAM (self-esteem) scale. Following the table, the findings from each measure are examined in more detail.

Table 7.4. Means and standard deviations for main longitudinal measures

Measure (min/max possible score)	T1 (n = 123)		T2 (n = 122)		T3 (n = 120)		T4 (n = 116)		T5 (n = 115)		T6 (n = 114)		T7 (n = 100)	
	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)	Mean score (SD)
<b>ABEC score</b> (17/68)	43.12 (6.95)	44.47 (6.99)	44.83 (5.77)	44.47 (6.28)	46.80 (5.95)	46.88 (5.79)	46.84 (5.75)							
<b>Family attitude</b> (2/8)	4.62 (1.31)	5.02 (1.13)	5.00 (1.09)	5.3 (1.1)	5.45 (1.01)	5.54 (1.19)	5.65 (1.09)							
<b>Family behaviour</b> (2/8)	3.59 (1.19)	3.34 (1.21)	3.53 (1.11)	3.53 (1.06)	3.70 (.99)	3.60 (1.08)	3.69 (1.05)							
<b>Peer attitude</b> (2/8)	5.54 (1.4)	5.81 (1.44)	5.77 (1.14)	6.03 (1.25)	6.21 (1.07)	6.18 (1.31)	6.4 (1.01)							
<b>Peer behaviour</b> (2/8)	1.51 (1.31)	1.77 (1.46)	1.72 (1.35)	1.97 (1.34)	2.32 (1.34)	2.31 (1.23)	2.62 (1.29)							
<b>TV viewing habits</b> (0/47)	22.63 (7.39)	-	-	22.2 (6.97)	-	-	22.16 (7.45)							
<b>Alcohol adv: Implicit</b> (0/6)	2.45 (1.6)	2.56 (1.47)	3.08 (1.61)	3.0 (1.83)	2.75 (1.42)	2.11 (1.53)	2.83 (1.72)							
<b>Alcohol adv: Abstraction</b> (0/6)	1.54 (1.39)	1.90 (1.39)	2.43 (1.62)	2.19 (1.55)	2.37 (1.31)	1.41 (1.17)	1.67 (1.41)							
<b>Alcohol adv: Explicit</b> (0/6)	.51 (.81)	0.88 (1.06)	1.01 (1.33)	1.65 (1.39)	1.17 (1.08)	0.94 (1.04)	1.26 (1.26)							
<b>IAM score</b> (16/144)	116.97 (16.88)	-	-	111.38 (19.49)	-	-	106.76 (20.61)							

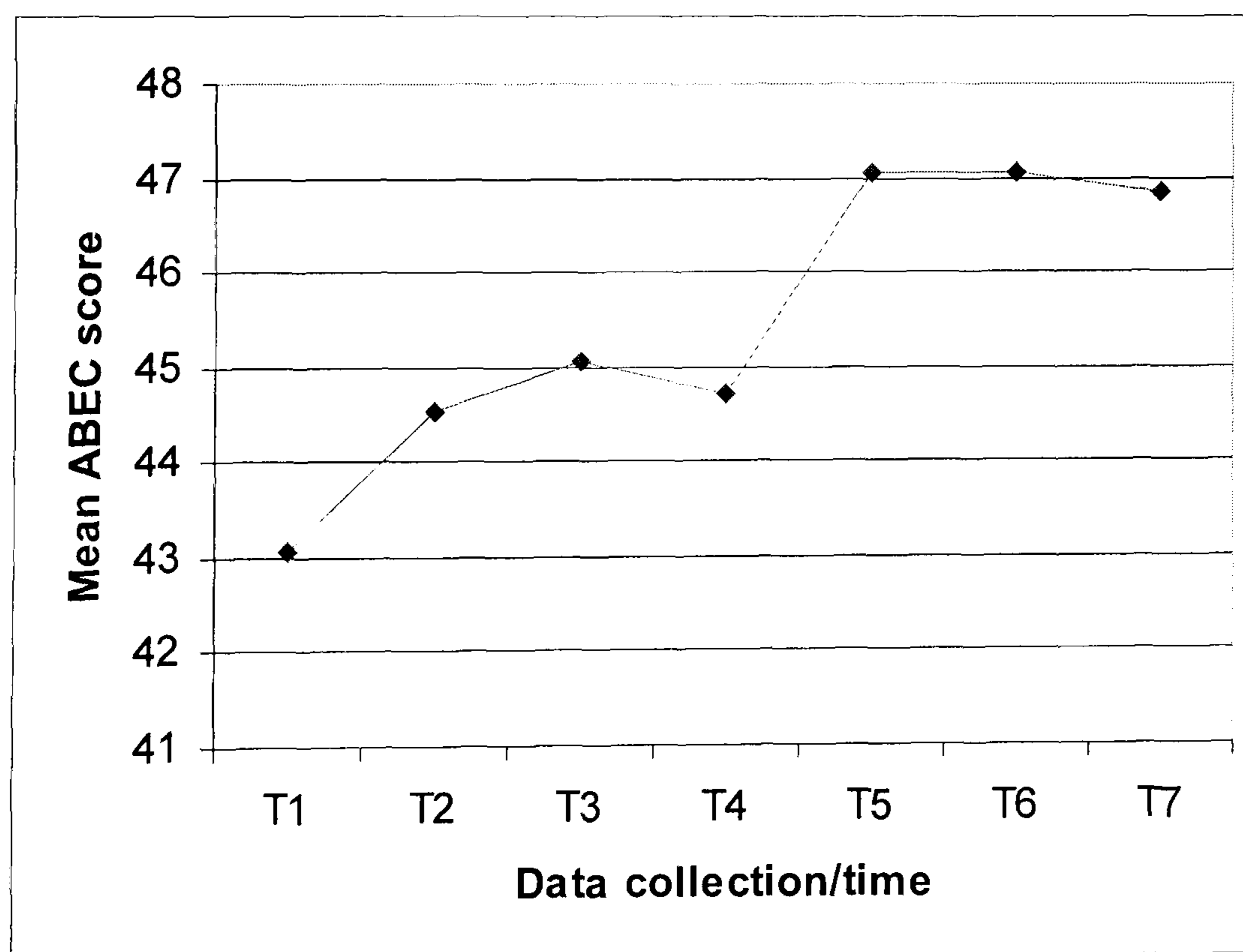
## Alcohol beliefs, expectancies and perceptions

The development and changes over time of children's positive alcohol expectancies are explored in the first part of this section. Analysis also considers how they are affected by the moderator variables, e.g. gender, lone viewing, etc. In the second part, findings are reported relating to family and peer influences, personal experience and predicted behaviour.

### Alcohol Beliefs and Expectancies in Childhood (ABEC) scale

Mean positive alcohol expectancies for the participating children ( $n = 100$ ) were computed from scores on the ABEC measure and Figure 7.1 illustrates the changes in the means over the period of the longitudinal study.

**Figure 7.1. Changes in ABEC scores from Year 5 to Year 8 ( $n = 100$ ) (min possible score = 17, max possible score = 68)**



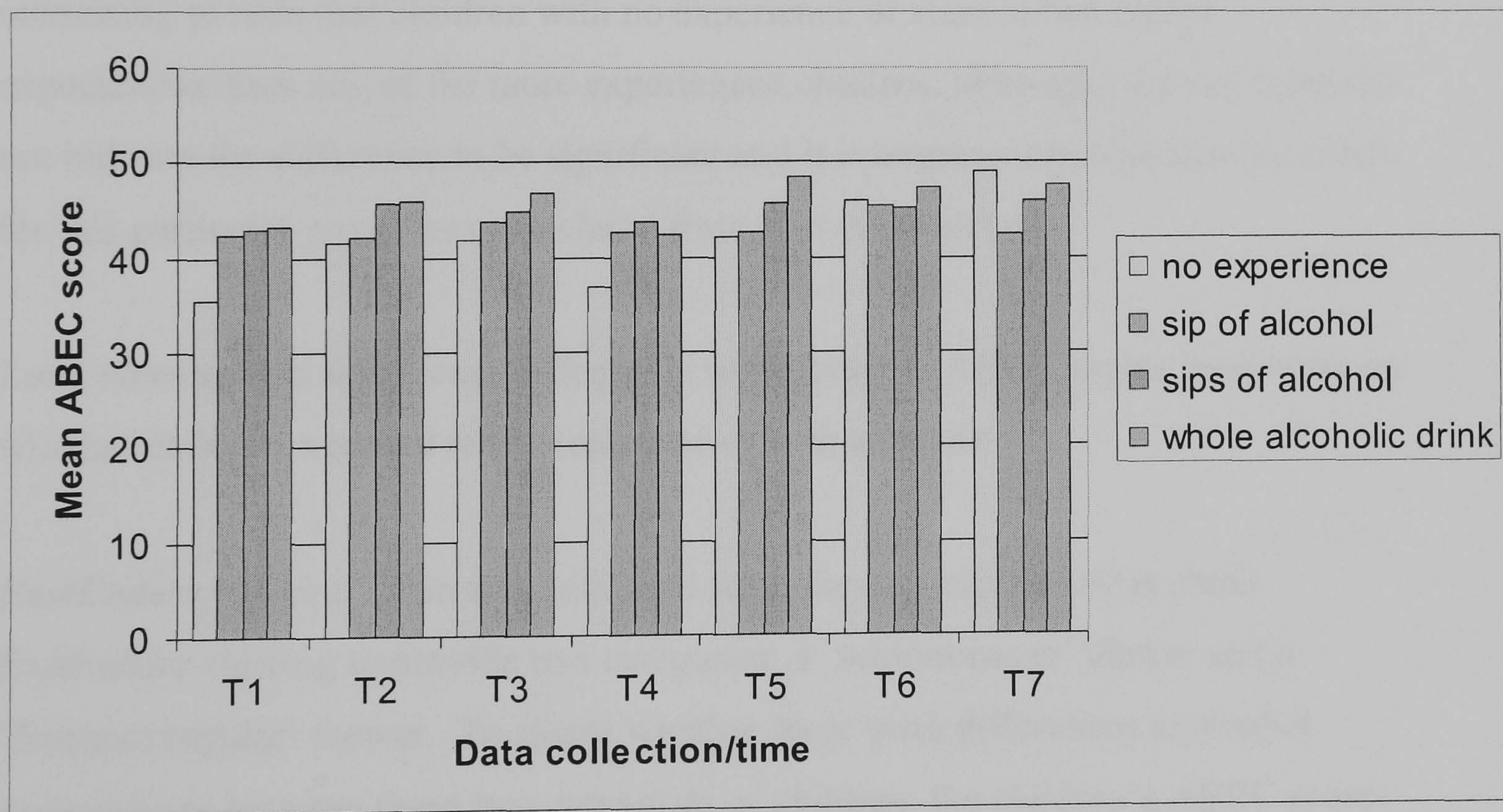
As Figure 7.1 clearly shows, children's alcohol expectancies showed an overall linear increase over time before appearing to become stable, although there was slight decrease in their expectancies at T4. A one-way repeated measures ANOVA was conducted with the dependent variable being the ABEC score and the time of the

data collection as the factor. The results for the ANOVA indicated a strong significant time effect, Wilks  $\Lambda = .71$ ,  $F(6, 94) = 6.32$ ,  $p < .001$ , multivariate partial eta squared = .288. Follow-up polynomial contrasts indicated a significant linear trend,  $F(1, 99) = 30.86$ ,  $p < .001$ . Pairwise comparisons showed that, in addition to the linear trend, significant changes in means occurred from T1 to T2 ( $p < .05$ ) and from T4 to T5 ( $p < .001$ ), suggesting that these were the periods of greatest growth in alcohol expectancies.

**Gender differences:** No significant effects of gender were found for alcohol expectancies.

**Personal experience with alcohol:** Experience with alcohol appeared to affect children's mean ABEC scores as indicated in Figure 7.2.

**Figure 7.2. ABEC scores as a function of personal alcohol experience**



At each data collection a one-way between groups ANOVA was computed on the ABEC scores. Table 7.5 reports the ANOVA statistics together with an indication of where differences were found in planned post-hoc comparisons.

**Table 7.5. Analysis of variance for ABEC scores according to experience with alcohol**

	F	df	partial eta <sup>2</sup>	p	Post-hoc comparisons*
<b>T1 (n = 123)</b>	5.2	3,119	.12	<.01	A differed to B, C and D.
<b>T2 (n = 122)</b>	3.28	3,118	.07	<.05	B differed to D
<b>T3 (n = 120)</b>	2.67	3,116	.06	= .051	
<b>T4 (n = 116)</b>	4.44	3,112	.11	<.01	A differed to D
<b>T5 (n = 115)</b>	5.74	3,111	.13	= .001	B differed to D
<b>T6 (n = 114)</b>	1.33	3,110	.03	n.s.	
<b>T7 (n = 100)</b>	3.59	3,96	.1	<.05	B differed to D

\*A = no experience; B = sip; C = sips; D = whole drink

With the exception of T7, experience with alcohol increased children's alcohol expectancies, and children who had consumed a whole drink were more likely to have higher alcohol expectancies than those with less experience. At T7 it was interesting to note that children with no experience of alcohol had higher expectancies than any of the more experienced children, although post-hoc tests did not indicate the difference to be significant and it is important to note that the mean for this particular group was calculated from four children only.

**Lone viewing:** No significant differences were found in ABEC scores depending on whether children watched television alone or with an adult.

**EastEnders viewers:** Data was collapsed from the original questions about EastEnders viewing to provide two categories: a 'seldom/never' viewer and a 'frequent/regular' viewer. To assess whether there were differences in alcohol expectancies between these two categories of children, the children's ABEC scores at each data collection were entered into an independent groups t-test with type of viewer as the independent variable. In Table 7.6 below the first two columns of the table itemise when the data was collected, i.e. a response at T2 to the EastEnders question is used as the independent variable for T1, T2 and T3 ABEC score data, whilst the T4 EastEnders response is used for T4, T5, T6 and T7 ABEC data. As indicated, whilst the early mean ABEC scores (T1, T2, T3) were slightly higher for

the children who rarely watched the programme, these were not significant. However, this situation reversed later in the study and the higher mean ABEC scores by regular viewers was found to be significant from T5 onwards. A further analysis of the T7 ABEC scores using T7 EastEnders data confirmed that EastEnders viewers were more likely to have higher alcohol expectancies than non-viewers. The implications of this are considered in the discussion.

**Table 7.6. ABEC scores by EastEnders viewing frequency**

Time of East-Enders response	Time of ABEC score	Never/seldom viewer		Frequent/regular viewer		T	Sig.
		N	Mean ABEC score (S.D.)	N	Mean ABEC score (S.D.)		
<b>T2</b>	T1	43	43.7 (6.9)	77	42.99 (6.94)	.539	n.s.
	T2	43	45.58 (6.57)	76	43.96 (7.05)	1.23	n.s.
	T3	42	45.19 (6.23)	75	44.69 (5.62)	.44	n.s.
<b>T4</b>	T4	27	42.67 (6.51)	89	45.02 (6.14)	-1.72	P = .09
	T5	27	44.33 (7.66)	88	47.56 (5.14)	-2.52	< .05
	T6	27	44.11 (6.03)	87	47.74 (5.47)	-2.93	< .01
	T7	24	44.04 (6.49)	76	47.72 (5.24)	-2.83	< .01
<b>T7</b>	T7	32	44.72 (5.88)	68	47.84 (5.45)	-2.6	< .05

### **Predicted drinking behaviour**

Responses to one question on predicted behaviour as adults, produced means ranging from 3.32 (SD = 1.15 ) at T1 to 2.97 (SD = 1.27) at T3, with the final mean predicted behaviour at T7 = 3.24 (SD = 1.1). The mode at T1, T2, T3, T7 was 3 and



at T4, T5, T6 was 4. Whilst it is interesting to note that the highest mean figure was at the start of the study, the means over time did not differ significantly ( $n = 100$ ), n.s. The mean figure suggested that children would be drinking once a week as adults.

**Gender differences:** There were no significant differences between boys and girls in terms of predicted behaviour.

### **Perceptions of family attitudes and behaviour**

Family influences were calculated by summing the scores from the perceived parental attitude towards their children's drinking at their current age and at age 20. With possible scores of 2 to 8, the means ranged from 4.73 (SD = 1.27) at T1 to 5.65 (SD = 1.08) at T7. The results for a one way within-subjects ANOVA indicated a significant time effect, Wilk's  $\Lambda = .607$ ,  $F(6,94) = 10.13$ ,  $p < .001$ , multivariate partial eta squared = .393. Follow-up polynomial contrasts suggested a significant linear trend,  $F(1,99) = 52.92$ ,  $p < .001$ , partial eta squared = .348. In addition to the significant linear trend, significant growth was identified at T1 to T2, and T3 to T4. This suggests that as children get older they perceive their parents as being more accepting about them drinking alcohol, which is not unexpected.

Responses to the one question about family behaviour ("the adult in the family who drinks the most") produced means ranging from 3.4 (SD = 1.25) at T2 to 3.69 (SD = 1.06) at T7. These means fall between drinking once a week and drinking every few days. In a one way, within-subjects ANOVA the differences were not significant, suggesting that the children's perceptions of family alcohol behaviour were consistent over time.

**Gender differences:** In a between subjects ANOVA there were no significant differences between boys' and girls' perceptions of family attitude and behaviour at any point.

## Perceptions of peer attitudes and behaviour

Perceived peer attitude comprised the sum of scores on questions about friends' perceptions of now and future drinking. Means ranged from 5.71 (SD = 1.24) at T1 to 6.4 (SD = 1.01) at T7. In a one-way repeated measures ANOVA, the differences over time were reliable, Wilks' Lambda = .71,  $F(6,94) = 6.27$ ,  $p < .001$ , multivariate partial eta squared = .286. Follow-up polynomial contrasts indicated a significant linear trend with progressive increases in means,  $F(1,99) = 27.9$ ,  $p < .001$ , partial eta squared = .22. As with the family attitude scores, this increase in perceived peer attitudes as children get older is not unexpected.

Means for peer behaviour was based on one question referring to a close friend's drinking behaviour, produced progressively increasing means ranging from 1.58 (SD = 1.36) at T1 to 2.62 (SD = 1.29) at T7. These differences were reliable in a one-way repeated measures ANOVA, Wilks' Lambda = .623,  $F(6,94) = 9.49$ ,  $p < .001$ , multivariate partial eta squared = .38. Polynomial contrasts indicate a strong linear trend,  $F(1,99) = 51.11$ ,  $p < .001$ , partial eta squared = .34. Again, this is as might be expected as children move into adolescence.

**Gender differences:** In a between subjects ANOVA the difference between boys' and girls' perception of peer attitudes found to be significant only at T6, with boys having a greater mean score of  $M = 6.55$  (SD = 1.27) compared to the girls,  $M = 5.78$  (SD = 1.24),  $F(1, 112) = 10.77$ ,  $p < .01$ . It suggests that, compared to girls of the same age, 12 year old boys believe their peers to have a more positive attitude to alcohol.

## Family v peer attitudes

At each data collection a comparison was made of the perceived family and peer attitudes and, in paired t-tests, the consistently higher peer attitude scores differed significantly to those of family attitudes whilst the consistently lower peer behaviour scores differed significantly to those of family behaviour as indicated in Table 7.7.

**Table 7.7. Mean differences between family influences and peer influences**

<b>Time</b>	<b>Mean difference</b>	<b>t</b>	<b>d/f</b>	<b>p.</b>
<b>Family attitude/Peer attitude</b>				
T1	-.92	-7.53	122	< .001
T2	-.79	-6.79	121	< .001
T3	-.77	-8.31	119	< .001
T4	-.73	-6.3	115	< .001
T5	-.76	-7.29	114	< .001
T6	-.64	-7.05	113	< .001
T7	-.75	-7.29	99	< .001
<b>Family behaviour/Peer behaviour</b>				
T1	2.07	15.01	122	< .001
T2	1.57	10.44	121	< .001
T3	1.81	11.81	119	< .001
T4	1.55	10.10	115	< .001
T5	1.38	9.41	114	< .001
T6	1.29	9.05	113	< .001
T7	1.07	7.01	99	< .001

These findings suggest that children, unsurprisingly, perceive their peers to be far more accepting of drinking behaviour than parents. Whilst there were clear and reliable differences between perceived drinking behaviours of family and peers, these decreased over time as indicated in Table 7.7.

### **Television viewing habits and advertising knowledge**

In this section television viewing habits are reported in terms of the amount and type of television watched and favourite advertisements nominated by the children.

Advertising knowledge is considered in terms of implicit, pre-explicit and explicit awareness of both alcohol and non-alcohol advertisements. The latter is also

analysed in relation to the moderator variables in order to establish whether gender, viewing context (alone or with adult) or experience with alcohol affect alcohol advertising awareness.

### **TV Viewing scores**

The Television Viewing Habits questionnaire was completed on three occasions only, T1, T4 and T7. A TV viewing score for each child, which provided a comparative measure of the amount of television watched, was calculated by summing scores from questions 4 to 8 (see Table 5.5) to give a general TV viewing score. Possible scores ranged from 0 to 17, with 0 representing no television viewing at all and 17 meaning that television was watched every evening, and afternoons and evenings on both Saturday and Sunday. A commercial television viewing score was calculated from responses to question 13, part 1; this covered frequency of viewing of those programmes which were both high in alcohol commercial content and frequently viewed by children. A maximum score of 24 was possible meaning that the child always or nearly always watched all of the commercial programmes listed. A sports TV viewing score was calculated from the sum of responses to question 13(b), and question 14. The possible sports TV viewing scores ranged from 0, meaning no sports viewing, to 12 indicating that all of the sports programmes listed were watched always or nearly always and that television sports channels were viewed a lot. Table 7.8 below gives the mean TV scores and indicates whether there were significant differences over time for each type of viewing in a one way Anova.

**Table 7.8. Mean TV viewing scores by type of viewing (general, commercial or sports) (n = 100)**

<b>Measure</b>	<b>Time</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>p value</b>
<b>General TV viewing score</b>	T1	10.92	2.99	n.s.
	T4	10.99	2.77	
	T7	10.38	3.05	
<b>Commercial TV viewing scores</b>	T1	8.1	4.62	n.s.
	T4	7.66	4.17	
	T7	7.14	4.19	
<b>Sports viewing score</b>	T1	3.78	3.47	p < .01
	T4	3.75	3.84	
	T7	4.64	3.57	

Only sports viewing appeared to increase significantly over time. However, this may well be due to the screening of a major European football championship just prior to the last data collection.

***Advertising and favourite advertisements***

As far as advertising was concerned, at T1 57.7% of children responded that they often watch advertisements. This figure dropped over time to 50.4% at T4 and 40.7% at T7. Most of the children were able to name a favourite television commercial and the 3 most popular advertisements at each data collection are given in Table 7.9 below.

**Table 7.9. Most nominated favourite advertisements at T1, T4 and T7 and percentage of children nominating the advertisement**

Order of popularity	T1 (n = 123)	T4 (n = 116)	T7 (n = 100)
1	Budweiser <sup>†</sup> 13.8%	John Smith's <sup>†</sup> 13%	Nike 14%
2	Hovis 7.3%	Foster's <sup>†</sup> 3.3%	WKD <sup>†</sup> 12%
3	Persil capsules 6.5%	= Playstation 2.5% Marmite Peugeot Hovis Nicotine patch	John Smith's <sup>†</sup> 8%

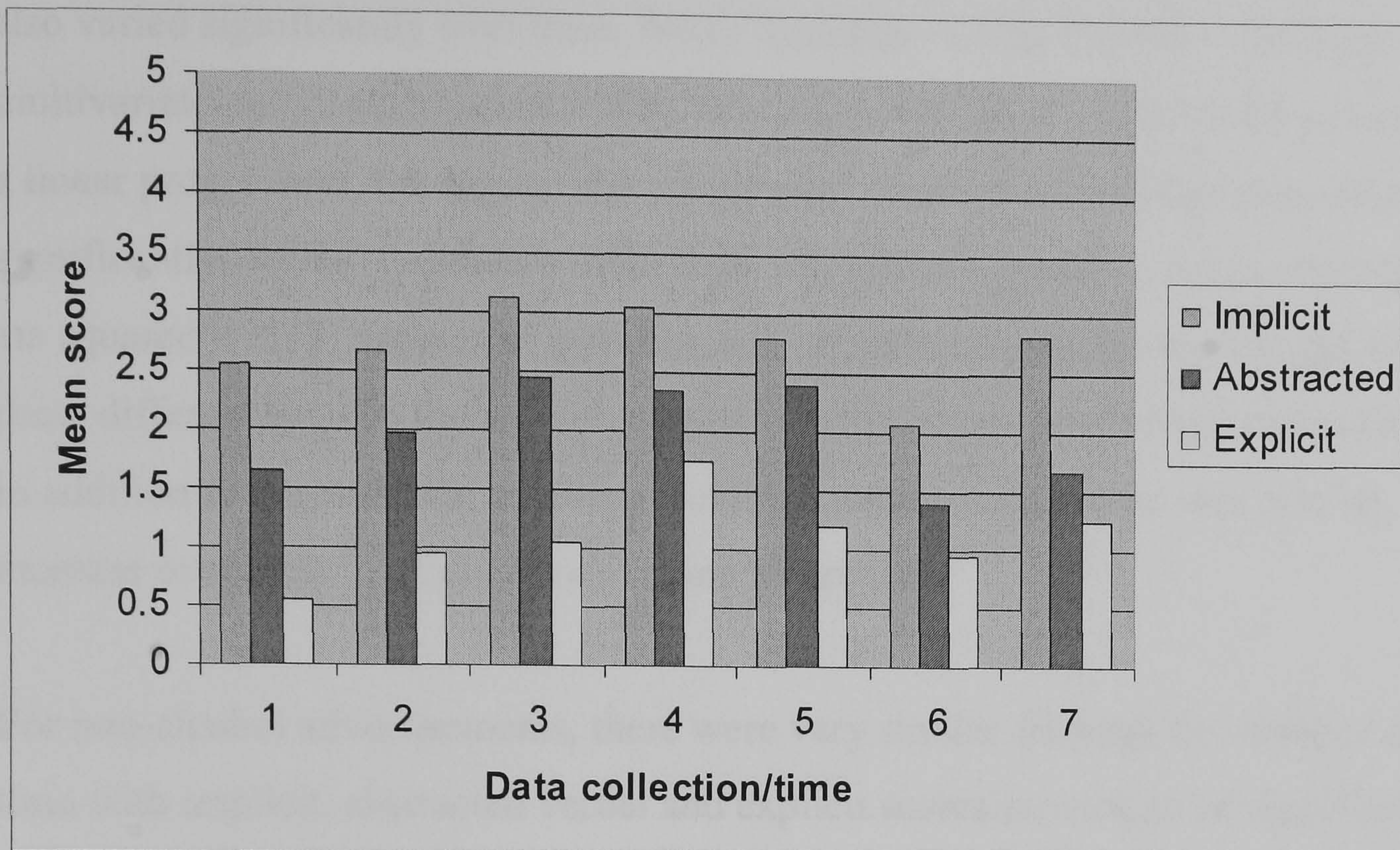
<sup>†</sup> Alcohol advertisement

Clearly alcohol advertisements were popular with the sample as they were mentioned at each data collection point. The Budweiser advertisements prevalent at the time of the T1 data collection featured either animatronics, in the form of lizards and frogs, or a group of young men using the catchphrase “Whassup”. Whilst no other alcohol advertisements were mentioned at T1, there were a number of individual nominations for advertisements for other alcoholic drinks, e.g. Boddington's, Bacardi Breezer and Guinness, at T4 and T7.

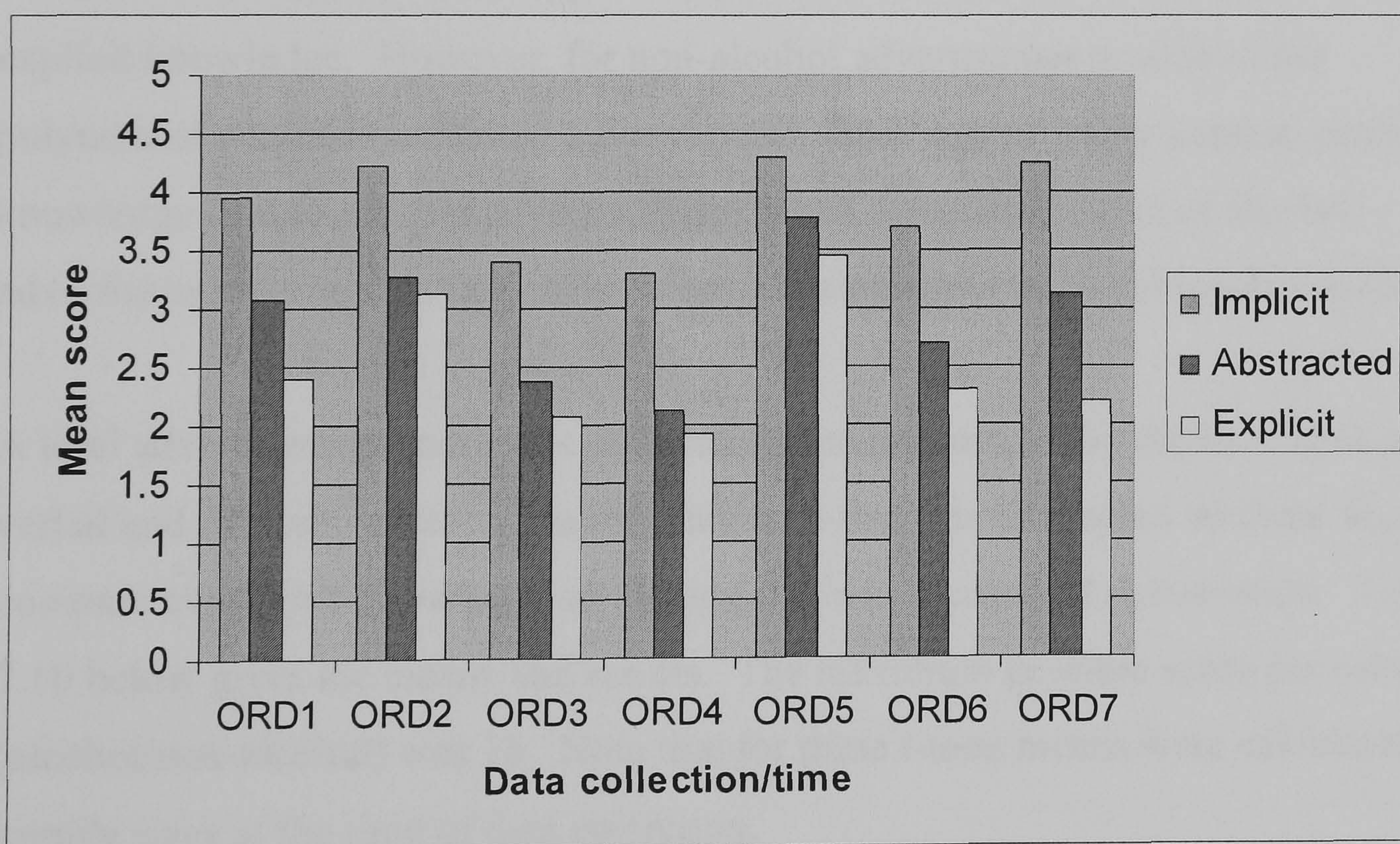
### TV Advertising Awareness Questionnaire

Mean scores were computed for implicit (awareness of having seen the advertisement on television), for abstracted verbal knowledge (awareness of the type of product advertised) and for explicit knowledge (ability to name the advertised brand). With a total of 6 alcohol and 6 non-alcohol advertisements, the maximum possible score for each variable was 6. Figures 7.3 and 7.4 display means for all three measures for both alcohol and non-alcohol advertisements.

**Figure 7.3. Mean scores for implicit, abstracted verbal and explicit knowledge of alcohol advertisements (n = 100)**



**Figure 7.4. Mean scores for implicit, abstracted verbal and explicit knowledge of non-alcohol advertisements (n = 100)**



Children's ability to recognise alcohol advertisements varied over the course of the study and, in a one-way repeated measures Anova, these differences were significant, Wilks' Lambda = .66,  $F(6,94) = 8.06$ ,  $p < .001$ . However, post hoc comparisons indicated that the changes were not linear (n.s.) and thus reflected scores which were

perhaps more representative of variations due to the questionnaire at the time. In a one way repeated measures ANOVA, abstracted verbal knowledge of advertisements also varied significantly over time, Wilks' Lambda = .546,  $F(6,94) = 13.08$ ,  $p < .001$ , multivariate partial eta squared = .454. Again, polynomial contrasts did not indicate a linear progression, but higher order measures. Explicit knowledge also varied significantly, Wilks' Lambda = .473,  $F(6, 94) = 17.43$ ,  $p < .001$ , multivariate partial eta squared = .527. However, post-hoc comparisons for explicit knowledge found these differences to be linear, with quadratic and higher order trends, suggesting that, in addition to the variation resulting from the questionnaire, there was also an increase over time in alcohol brand name awareness.

For non-alcohol advertisements, there were very similar findings for changes over time with implicit, abstracted verbal and explicit scores proving to be significantly different: Wilks' Lambda = .51,  $F(6,94) = 15.21$ ,  $p < .001$ , multivariate partial eta squared = .49 for implicit knowledge; Wilks' Lambda = .37,  $F(6,94) = 26.9$ ,  $p < .001$ , multivariate partial eta squared = .63 for abstracted verbal knowledge; Wilks' Lambda = .3,  $F(6,94) = 35.72$ ,  $p < .001$ , multivariate partial eta squared = .69 for explicit knowledge. However, for non-alcohol advertisements none of the polynomial contrasts indicated a linear trend. This lack of linear trend in explicit knowledge of non-alcohol advertisements when compared to that of alcohol advertisements suggests that children are learning about alcohol brands specifically.

A total advertisement score was computed from the sum of the implicit, abstracted verbal and explicit scores. A paired samples t-test was conducted on these scores to compare children's knowledge of alcohol and non-alcohol advertisements. Table 7.10 below gives the means and results. The maximum possible score per category (alcohol/non-alcohol) was 18. Note that for these t-tests means were calculated on sample sizes at the time of data collection.



**Table 7.10. A comparison of mean total advertisement knowledge for alcohol and non-alcohol advertisements**

<b>Data collection</b>	<b>N</b>	<b>Mean total alcohol advertisement score (SD)</b>	<b>Mean total non-alcohol advertisement score (SD)</b>	<b>significance</b>
<b>T1</b>	123	4.51 (3.73)	9.43 (3.99)	***
<b>T2</b>	122	5.34 (3.38)	10.23 (3.96)	***
<b>T3</b>	120	6.52 (4.17)	7.7 (3.87)	***
<b>T4</b>	116	6.84 (4.41)	7.16 (3.81)	n.s.
<b>T5</b>	115	6.28 (3.37)	11.58 (4.23)	***
<b>T6</b>	114	4.46 (3.41)	8.45 (3.45)	***
<b>T7</b>	100	5.76 (4.07)	9.59 (3.8)	***

As the above table indicates, there was often a considerable difference in children's knowledge of alcohol and non-alcohol advertisements, with the scores for alcohol advertisements being half or nearly half of the non-alcohol scores. Of the two exceptions to this at T3 and T4, only the differences at T4 are not significant. This may have been due to the particular advertisements under scrutiny.

**Gender differences:** In terms of gender differences for advertisement knowledge, the mean total advertisement scores were compared in independent groups t-tests for each data collection with gender as the independent variable. The means total scores are given in Table 7.11.

**Table 7.11 Mean total advertisement scores by gender and advertisement type**

Time	Mean total advertisement scores (SD)			sig.
	n	Boys	Girls	
<b>Alcohol advertisements</b>				
T1	b = 63 g = 60	4.63 (3.27)	4.28 (3.49)	n.s.
T2	b = 63 g = 59	5.62 (3.43)	5.05 (3.32)	n.s.
T3	b = 61 g = 59	6.33 (4.1)	6.71 (4.26)	n.s.
T4	b = 60 g = 56	7.48 (4.68)	6.14 (4.02)	n.s.
T5	b = 60 g = 55	7.1 (3.15)	5.38 (3.4)	p < .01
T6	b = 60 g = 54	4.93 (3.45)	3.94 (3.32)	n.s.
T7	b = 52 g = 48	6.4 (4.32)	5.06 (3.69)	n.s.
<b>Non-alcohol</b>				
T1	b = 63 g = 60	8.58 (3.82)	10.31 (4.02)	p < .05
T2	b = 63 g = 59	9.5 (3.96)	11 (3.85)	p < .05
T3	b = 61 g = 59	7.37 (3.66)	8.04 (4.08)	n.s.
T4	b = 60 g = 56	6.88 (4.05)	7.45 (3.54)	n.s.
T5	b = 60 g = 55	11.18 (4.48)	12.02 (3.92)	n.s.
T6	b = 60 g = 54	7.4 (3.42)	9.63 (3.12)	p < .001
T7	b = 52 g = 48	9.85 (3.83)	9.31 (3.78)	n.s.

Boys had better alcohol advertisement knowledge with means exceeding the girls' means on all occasions except for T3. In an independent groups t-test with gender as the independent variable and total advertisement scores as the dependent variable, the boys greater knowledge was significant only at T5,  $t(113) = 2.81$ ,  $p < .01$ .

However, for non-alcohol advertisements the girls' knowledge exceeded that of the boys at all data collection points except for T7, although these differences were only significant at T1, T2 and T6. Whilst it appeared that girls were more knowledgeable

in general about advertisements, the boys in the study appeared to be better informed as far as alcohol advertisements are concerned.

***Personal experience with alcohol:*** Comparisons were made of advertisement knowledge in relation to the extent of personal experience with alcohol. In a between groups ANOVA there were no significant differences between groups for non-alcohol advertisements. However, for alcohol advertisements the effect of personal experience with alcohol appeared to influence awareness and recall, as Table 7.12 indicates.

**Table 7.12. A comparison of TV alcohol advertisement knowledge by personal experience with alcohol (mean total scores)**

	No experience	Sip of alcohol	More than one sip but not a whole drink	Has consumed a whole alcoholic drink	Significance
T1	n = 8  3.75 (2.71)	n = 42  3.90 (3.39)	n = 35  4.86 (3.39)	n = 38  5.03 (3.45)	n.s.
T2	n = 7  3.86 (3.13)	n = 37  5.51 (3.26)	n = 35  4.69 (3.69)	n = 43  5.98 (3.18)	n.s.
T3	n = 10  5.2 (2.57)	n = 28  5.96 (4.25)	n = 51  6.02 (4.37)	n = 31  8.26 (3.79)	p = .052
T4	n = 4  4.25 (2.63)	n = 21  6.57 (4.28)	n = 38  6.61 (4.65)	n = 53  7.30 (4.40)	n.s.
T5	n = 4  5.75 (2.06)	n = 15  6.07 (3.63)	n = 26  4.81 (3.14)	n = 70  6.90 (3.33)	p = .056
T6	n = 4  2.0 (0)	n = 15  2.53 (2.26)	n = 19  3.53 (2.65)	n = 76  5.21 (3.61)	p < .01
T7	n = 4  2.25 (1.71)	n = 13  5.92 (3.68)	n = 14  6.14 (2.91)	n = 69  5.85 (5.76)	n.s.

With one exception, i.e. T7, children who had had a whole alcoholic drink appeared to have better alcohol advertisement knowledge although the difference was only significant at T6. Planned post hocs, using Tukey's HSD test, for this data collection indicated differences in alcohol advertisement knowledge between children who have had a whole alcoholic drink and children who have only had a sip of alcohol.

Thus experience with alcohol, particularly around the age of 12, seems to be related to increased alcohol advertisement knowledge although, in common with other studies, the direction of causality is difficult to ascertain in this analysis.

**Lone viewing:** Mean total advertisement knowledge scores were compared for differences in knowledge according to whether children watch television alone or in the company of an adult. Table 7.13 gives the means for this data at T1, T4 and T7, as the lone viewing question was only posed on these three occasions.

**Table 7.13. Mean total advertisement scores by viewing situation (alone or with adult) and type of advertisement (alcohol or non-alcohol)**

Time	n	Mean total advertisement scores (SD)		p
		alone	with adult	
<b>Alcohol</b>				
T1	Lone = 48	3.66	5.05	< .05
	With = 75	(2.87)	(3.57)	
T4	Lone = 27	6.0	7.09	n.s.
	With = 89	(4.1)	(4.49)	
T7	Lone = 41	5.83	5.71	n.s.
	With = 59	(4.07)	(4.09)	
<b>Non-alcohol</b>				
T1	Lone = 48	8.39	10.09	< .05
	With = 75	(3.69)	(4.07)	
T4	Lone = 27	5.81	7.56	< .05
	With = 89	(2.93)	(3.96)	
T7	Lone = 41	9.27	9.81	n.s.
	With = 59	(3.83)	(3.79)	

Watching television at the age of 9 to 10 years old with an adult appeared to increase advertisement knowledge, of both alcohol and non-alcohol commercials, and these differences were found to be reliable in an independent groups t-test with total advertisement knowledge scores as the dependent variable and viewing type as the independent variable. This effect decreases as children get older, and disappears earlier for alcohol rather than non-alcohol advertisements. This finding suggests that

it is important to consider this factor when conducting path analysis and using T1 data.

### Self-esteem: IAM questionnaire

The self-esteem measure, IAM questionnaire, was completed at T1, T4 and T7 and produced means of 116.24 (SD = 16.69), 111.61 (SD = 19.67) and 106.76 (SD = 20.61) respectively. In a mixed design ANOVA there was a main effect of time (Wilks' Lambda = .796,  $F(2,97) = 12.44$ ,  $p < .001$ , multivariate partial eta squared = .20). Polynomial contrasts indicated a clear linear trend,  $F(1,99) = 25.11$ ,  $p < .001$ , which was not unexpected in light of previous studies of self-esteem in this age group. However, there was also an interaction between gender and self-esteem over time as indicated in Table 7.14.

**Table 7.14 . Changes in mean IAM scores by time and gender**

	Mean IAM T1	Mean IAM T4	Mean IAM T7	significance
Boys	116.57 (17.45)	113.40 (21.53)	115.10 (16.36)	n.s.
Girls	115.87 (15.99)	109.66 (17.47)	97.73 (21.07)	$p < .001$

In a repeated measures ANOVA, no significant differences were found for changes in boys' self esteem over time. However, for girls, there was a strong and significant effect of time on their self esteem, (Wilks' lambda = .593,  $F(2, 46) = 15.73$ , multivariate partial eta squared = .41). Girls' self esteem appears to diminish considerably over this period, unlike boys' self esteem.

## **Differences by school**

Finally, the main measures were analysed for differences by school, i.e. the ABEC scale, advertisement knowledge, TV viewing scores and self-esteem.

Neither ABEC scores nor IAM self-esteem scores differed by school. However, there were differences in means for knowledge of television advertisements as Table 7.15 below indicates. Significance figures given are for the results of independent group t-tests which compared the mean total advertisement scores by school.

**Table 7.15. Mean advertisement scores by school and type of advertisement**

Time	n	Mean total advertisement score (SD)		P
		School 1	School 2	
<b>Alcohol advertisements</b>				
T1	School 1 = 58	5.4	3.72	< .01
	School 2 = 65	(3.5)	(3.08)	
T2	School 1 = 57	5.77	4.97	n.s.
	School 2 = 65	(3.62)	(3.13)	
T3	School 1 = 55	8.13	5.15	< .001
	School 2 = 65	(4.27)	(3.57)	
T4	School 1 = 54	8.67	5.24	< .001
	School 2 = 62	(4.33)	(3.85)	
T5	School 1 = 54	6.48	6.1	n.s.
	School 2 = 61	(3.27)	(3.48)	
T6	School 1 = 54	5.37	3.65	< .01
	School 2 = 60	(3.45)	(3.18)	
T7	School 1 = 53	6.39	5.04	p = .097
	School 2 = 47	(4.04)	(4.01)	
<b>Non alcohol advertisements</b>				
T1	School 1 = 58	9.93	8.98	n.s.
	School 2 = 65	(4.29)	(3.69)	
T2	School 1 = 57	11.4	9.2	< .01
	School 2 = 65	(4.13)	(3.53)	
T3	School 1 = 55	9.05	6.55	< .001
	School 2 = 65	(3.89)	(3.48)	
T4	School 1 = 54	8.7	5.81	< .001
	School 2 = 62	(3.67)	(3.42)	
T5	School 1 = 54	11.87	11.33	n.s.
	School 2 = 61	(3.87)	(4.53)	
T6	School 1 = 54	9.85	7.2	< .001
	School 2 = 60	(3.12)	(3.27)	
T7	School 1 = 53	10.53	8.53	< .01
	School 2 = 47	(3.38)	(3.99)	



That differences appeared for both alcohol and non-alcohol advertisements suggest that children at School 1 had greater advertising knowledge in general, although it should be noted that no differences in homogeneity of variances were identified. As data from T1, T4 and T7 were to be used for modelling, it was important to investigate whether the same school-related differences existed for all the three levels of alcohol advertisement knowledge (implicit, abstracted verbal and explicit). Table 7.16 presents the means and results of independent group t-tests.

**Table 7.16. Means for three levels of alcohol advertisement knowledge by school**

Data collection	Level	School 1	School 2	significance
T1	Implicit	2.83 (1.71)	2.12 (1.43)	p < .05
T1	Abstracted v	1.97 (1.43)	1.17 (1.24)	p < .01
T1	Explicit	0.60 (0.82)	0.43 (.81)	n.s.
T4	Implicit	3.69 (1.69)	2.40 (1.74)	p < .001
T4	Abstracted v	2.81 (1.52)	1.65 (1.38)	p < .001
T4	Explicit	2.17 (1.51)	1.19 1.10	p < .001
T7	Implicit	3.26 (1.61)	2.34 (1.72)	p < .01
T7	Abstracted v	1.75 (1.44)	1.57 (1.39)	n.s.
T7	Explicit	1.38 (1.36)	1.13 (1.13)	n.s.

The possible reasons for differences by school and its implications for the whole study are considered in the discussion. One reason may be that the children at

School 1 watch more television and means were compared in independent groups t tests for TV total viewing scores at T1, T4 and T7 for schools 1 and 2. These were 23.32 (SD = 7.76) and 22.02 (SD = 7.04) respectively for T1, 21.83 (SD = 7.02) and 22.52 (SD = 6.97) for T4 and 22.36 (SD = 8.11) and 21.93 (SD = 6.7). In all cases the means did not differ significantly. However, exploring TV scores by general viewing, commercial viewing and sports viewing suggested otherwise as indicated in Table 7.17. The mean viewing scores by type of viewing were compared for the two schools in independent groups t tests.

**Table 7.17. Mean TV viewing scores by category for Schools 1 and 2**

Time	n	Mean viewing score (SD)		p
		School 1	School 2	
<b>General TV viewing</b>				
T1	School 1 = 58	11.43	10.25	< .05 <sup>†</sup>
	School 2 = 65	(3.21)	(2.56)	
T4	School 1 = 54	11.39	10.42	= .062 <sup>†</sup>
	School 2 = 62	(3.13)	(2.25)	
T7	School 1 = 53	11.19	9.47	< .001 <sup>†</sup>
	School 2 = 47	(3.66)	(1.83)	
<b>Commercial TV viewing</b>				
T1	School 1 = 58	7.66	8.63	n.s.
	School 2 = 65	(4.47)	(4.76)	
T4	School 1 = 54	6.59	8.59	< .01 <sup>†</sup>
	School 2 = 62	(3.52)	(4.39)	
T7	School 1 = 53	6.36	8.02	< .05
	School 2 = 47	(3.74)	(4.52)	
<b>Sports TV viewing</b>				
T1	School 1 = 58	4.24	3.14	n.s.
	School 2 = 65	(3.65)	(3.11)	
T4	School 1 = 54	3.85	3.5	n.s.
	School 2 = 62	(3.4)	(4.04)	
T7	School 1 = 53	4.81	4.44	n.s.
	School 2 = 47	(3.41)	(3.77)	

<sup>†</sup>equal variances not assumed as Levene's test indicated significant differences in groups

These figures suggest that children at School 1 watched more television in general, whilst children at School 2 tended to watch more of the commercial programmes identified as featuring alcohol advertisements. At first sight it would seem that watching television more frequently has resulted in greater advertisement knowledge and, whilst this may well be the situation, alternative explanations are considered in the discussion.

## **Discussion**

The findings reported in this chapter address the first aim of the longitudinal study. They show the development of children's beliefs, expectations and perceptions of alcohol and their awareness of alcohol advertising as they move from childhood to adolescence. In addition, the data gathered provides a sound basis for investigating the potential long term influence of television alcohol advertising on alcohol beliefs and expectancies, a directional relationship, which is reported in the next chapter.

In view of the wealth of information provided by the data gathered in this longitudinal study, a very brief summary of the findings would be appropriate before considering any particular aspect in more detail. The children taking part in the study were 9 or 10 years old at the first data collection and had reached 12 or 13 years old by the time of the final data collection. At the start of the study nearly a third of the children taking part said that they had consumed an alcoholic drink and this increased to 69% by the end of the study. Children's expectancies of alcohol increased over time as they moved from pre-adolescence to early adolescence and this increase was enhanced by personal experience with alcohol. As adults, children anticipated that they would be drinking alcohol around once a week, and they were aware that their peers would approve more of their drinking than would their parents. Children's knowledge of alcohol advertisements was less than that of non-alcohol advertisements although they were more able to name the alcohol brands by the end of the study than at the beginning. The frequency with which they watched television changed little over the course of the study although more sports viewing took place near the final data collection. Alcohol advertisements were popular with the participants and were included in the top three favourite advertisements on all three

data collections. The self-esteem of the girls taking part in the study, but not the boys, went down over the course of the study.

As predicted, alcohol expectancies increased over the course of the study and this was the same for both boys and girls. The greatest increase occurred during one school year, Year 7, when expectancies increased sharply after the only slight decrease in expectancies. Whilst no U shaped learning curve was identified in the ABEC scores, it may be that this slight dip followed by a significant increase is indicative of an underlying reorganisation of knowledge and representational change. Aside from this it was clear that, as found in adolescents by Aas et al. (1998) and Christiansen, Goldman, & Inn (1982), children's alcohol expectancies also increased as a function of personal experience with alcohol. Moreover, it was surprising to note how even the level of personal experience was influential, e.g. any experience with alcohol increased expectancies, but equally a whole drink compared with a sip also made a difference. This tends to support the notion that there is an interaction of the physiological effects with existing expectancies as suggested by Christiansen et al. (1982).

Why EastEnders viewers should have higher alcohol expectancies is a little more difficult to explain. It may be because scenes frequently take place in the local public house in the series and are therefore influencing children's expectations of alcohol, for example, by portraying regular drinking on a daily basis, or it may simply be that the people who choose to watch the programme have a different attitude to life and alcohol to those who choose not to watch it. Without additional research, watching EastEnders cannot be regarded as a causal factor in higher alcohol expectancies, nonetheless it is important to be aware of it as a potential confound.

With regard to advertising awareness, it was reassuring to note that children's knowledge of alcohol advertisements did not exceed those of ordinary, non-alcohol advertisements. The gender differences identified in the data suggest that boys are more knowledgeable about alcohol advertisements, despite not being as knowledgeable generally as girls about advertisements. This suggests that boys may be more attracted to alcohol advertisements and confirms the finding in the categorisation study, albeit only approaching significance, that boys tend to find

them more attractive (see Chapter 3). However, the discovery that children who watched television with an adult were more knowledgeable about advertisements was unexpected in that it contradicts findings from a study with younger children, aged 4-6 years old, (Pine & Nash, 2002) where children who watched alone had better toy brand awareness. It may well be, though, that with such a different age group (i.e. 4 years old as opposed to 9 years old) and product this is not the case. Moreover, it tends to confirm research by Austin & Nach Ferguson (1995) which found that, instead of providing a balanced view, parents appeared to reinforce alcohol advertising.

The pattern of advertising knowledge depicted in Figure 7.3 and 7.4 raises some interesting questions. Whilst there was a steady increase in knowledge of alcohol advertisements up to T4, the opposite was occurring for non-alcohol advertisements. However, from T5 onwards the pattern of knowledge for both types of advertisement was not dissimilar, albeit lower for alcohol advertisements and with far less explicit recall. As this change in pattern occurred at the same time as changes appeared to be occurring in alcohol expectancies (Figure 7.1) then it is tempting to question whether the two are related. As T4 was the only occasion when knowledge of alcohol and non-alcohol advertisements was similar, is it possible that the re-organisation of alcohol expectancies, that was suggested earlier, moves children's responses to alcohol advertising to be more similar to that of non-alcohol products?

The findings also suggest that children may be learning from alcohol advertisements, in a way that is different to the way they respond to non-alcohol advertisements. Whilst children's explicit knowledge of alcohol advertisements was less than that of non-alcohol advertisements, only their explicit knowledge of alcohol advertisements increased over time. As the advertisements are a resource for brand names, it suggests that children are learning brand knowledge from alcohol advertisements and, therefore, that they are paying attention to them.

Unlike the Aitken et al. (1988) study where 10 year olds rarely named alcohol advertisements as favourite television commercials, a number of alcohol advertisements were among the most nominated by children of all ages in this study. This could reflect a number of things: firstly, the attractiveness of current

advertisements, particularly of the Budweiser advertisements at that particular time, secondly, more general changes in the attractiveness of alcohol advertisements to young people, and thus a temporal finding. Or thirdly, it may be a reflection of the power of humour in alcohol advertisements for attracting children, as all of the advertisements identified as favourites were humorous. Whatever the underlying cause, it appears that 10 year old children have better explicit knowledge now of advertised alcoholic drinks than similar children 17 years ago.

A number of findings were not surprising, for example those for children's perceptions of family and peer attitudes and behaviours. It is likely that children would perceive their friends as being more positive about alcohol, but equally have less experience with it, than their parents. A more detailed evaluation of the extent of family and peer influences on children's alcohol expectancies will be explored in the structural equation model, reported in Chapter 7. Also the lack of changes in TV viewing as children get older was not particularly remarkable and, as already mentioned, the fact that children were watching far more sport at the time of the final data collection point is perhaps more indicative of the screening of a major European football championship than a more general increase in sports viewing. Nonetheless, as with most sports programming, alcohol advertising was prevalent during commercial breaks. In view of previous research, the decrease in girls' self esteem from the age of 9 to 13 is not uncommon and certainly echoes previous studies which suggest that girls in this age group are particularly susceptible to decreases in self-esteem (e.g. Kling, Hyde, Showers, & Buswell, 1999; Polce-Lynch, Myers, Kliever, & Kilmartin, 2001; Quatman & Watson, 2001).

What is clear from this study of changes over time is that if some of the measures had only been taken on a two or three year basis, e.g. children's ABEC scores, then age-related differences, often cited in child development studies, might well have been suggested rather than the more gradual evolution of alcohol expectancies indicated in Figure 7.1. This confirms the need to assess children's knowledge on frequent basis in order to capture the subtle changes in knowledge that occur.

Two notes of caution spring to mind as far as the study is concerned. Firstly, the findings are based on self-report data. Whilst the children were reassured at each

data collection that the information they provided would be confidential, as with other self-report studies, there may have been some element of social desirability responding – either for self-aggrandissment purposes or to protect how they really felt. Secondly, the differences identified between the two schools as far as watching television and advertisement knowledge cannot be ignored. School 1 watched more television and yet had better knowledge of the advertisements than School 2 who watched less television, but more of the programmes on commercial television. This may indicate that children at School 1 had better recall, took more care in studying the advertisement stills presented, or it may be that they had seen more of the advertisements as a result of watching more television in general. There were difficulties in controlling for the frequency of viewing of advertisements insofar as it was not possible to gather advance information about when and how often advertisements would be screened for commercial reasons. The only method, therefore, for controlling for this was in terms of TV viewing scores and the findings in this study seem to suggest that this may be the case.

Despite these two considerations, the findings in this chapter nonetheless represent the first time that data on children's alcohol beliefs and expectancies have been gathered and analysed in such detail. The development of measures and their assessment over a period of years with a minimum of 100 children represents a substantial body of knowledge which was previously missing. Data from the 100 children who completed the longitudinal study, i.e. completed questionnaires at T7, were then available for analysis through structural equation modelling to determine whether and to what extent alcohol advertisement knowledge contributed to children's alcohol expectancies, and this is reported in the next chapter.

## Chapter 8

### Modelling the data (SEM)

The second aim of the longitudinal study identified in Chapter 5 was to investigate whether exposure to televised alcohol advertising in childhood influenced later alcohol expectancies. An alcohol expectancy measure, ABEC, was created to provide the dependent variable and knowledge of television alcohol advertising was chosen as the measure of exposure to alcohol advertising. The latter was perceived as a mediating variable between television viewing and alcohol expectancies due to the very positive, or advocacy, nature of advertising. This is in accord with Baron & Kenny's (1986) suggestion that "mediators explain how physical events take on internal psychological significance" (p.1176); for example, television viewing may influence positive alcohol expectancies through advertising.

The proposal was to model data collected when children were 9, 11 and 13 years old in structural equation models. This would permit testing of theoretically constructed models and provide estimations of the extent of any influence of television advertising knowledge on alcohol expectancies, in terms of a directional relationship, when modelled with other known potential influences. This chapter reports on preliminary pre-modelling analyses as well as on the actual models for evaluation. The discussion considers not only the findings, but also the method of analysis. However, before the findings are reported and the discussion entered into, it is appropriate to review the design of this part of the study as the original path diagram, which was outlined in Chapter 5, requires refinement.

#### **Structural equation model: refinement of design**

In Chapter 5, general terms were applied to the variables that were to be included in the model, e.g. 'family influence' or 'exposure to alcohol advertising'. With the



piloting and development of measures, these variables were specified at a more detailed level, as family and peer influences were separated out into attitude and behaviour measures and with the decision to use knowledge of television alcohol advertisements to quantify exposure to this type of advertising. Thus, the specification of the model became more defined and refined.

As already indicated, the dependent variable in the study was a measure of positive alcohol expectancies, children's ABEC scores. The predictor variables were as follows:

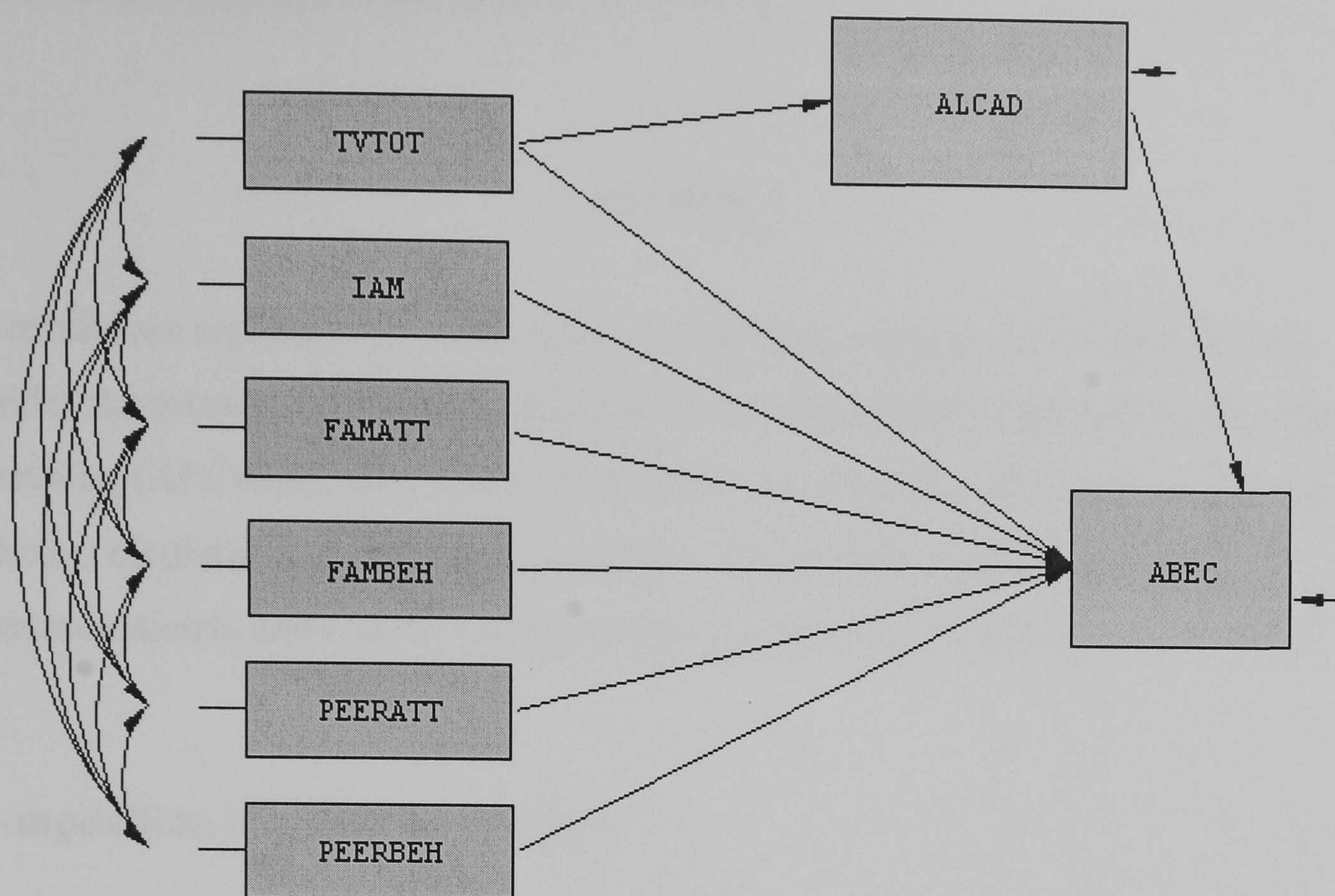
- television viewing score (TVTOT),
- family attitude (FAMATT),
- family behaviour (FAMBEH),
- peer attitude (PEERATT),
- peer behaviour (PEERBEH)
- self-esteem (IAM).

The final variable to be included in the model was the measure of exposure to television alcohol advertising. It was decided to use alcohol advertisement knowledge as this measure as a mediating variable between television viewing scores and ABEC scores. However, the measure comprised three levels of knowledge:

- ALCADI = implicit knowledge (recognition of the advertisement)
- ALCADA = abstracted verbal knowledge (awareness of type of product)
- ALCADE = explicit knowledge (brand knowledge).

As the three scores measured different levels of knowledge but were nonetheless correlated, the proposal was to use only one of the levels to avoid problems caused by collinearity. A decision as to which one to use was taken following preliminary pre-modelling analyses. If possible, and where appropriate, the effects of three moderator variables (gender, whether the child watched alone or with an adult, and personal experience with alcohol) were also to be modelled. The refined path diagram of the variables and their relationship is shown in Figure 8.1.

**Figure 8.1. Path diagram of variables to be modelled**



Key:

TVTOT = TV viewing habits	PEERATT = peer attitude
IAM = self-esteem score	PEERBEH = peer behaviour
FAMATT = family attitude	ALCAD = alcohol advertisement knowledge
FAMBEH = family behaviour	ABEC = alcohol beliefs and expectancies in childhood

All the variables mentioned above were measured at 18 month intervals when the children were 9, 11 and 13 years, i.e. at T1, T4 and T7 respectively. As outlined in Chapter 5, a number of causal models were to be tested for goodness of fit and for the subsequent identification of the coefficients, and therefore strengths, of the individual variables. Models were to be tested for

- T1 data on T4 ABEC scores
- T1 data on T7 ABEC scores
- T4 data on T7 ABEC scores

Thus, for example in the case of the first model above, the directional relationship between children's ABEC scores at T4 will be assessed for the influence of children's television viewing, advertisement knowledge, perceptions of family and peer attitudes and behaviours and their self-esteem at T1. These models would establish the relative contribution of alcohol advertisement knowledge on ABEC

scores at different points in time, and identify, if appropriate, at what age children were susceptible to television alcohol advertising.

## **Results**

The results are reported in two sections. Preliminary analyses in the first section consider the relationship between television viewing (TVtot), exposure to television advertising (ALCADR, ALCADA, ALCADE) and alcohol expectancy (ABEC) as predictor, mediator and dependent variables. The second section presents the covariance matrix and reports on the results of modelling the data.

### **Pre-modelling exploratory analyses**

As already discussed, and as in the path diagram (Figure 8.1), television alcohol advertising knowledge is identified as a mediating variable between television viewing and alcohol expectancies. Prior to modelling the data, an exploration of the relationships between these variables is recommended in order to gain some idea of the potential of the mediating variable (Baron & Kenny, 1986) and the viabilities of the proposed models. With this in mind, a number of exploratory analyses were carried out to establish:

- (1) the effect of TV viewing scores on ABEC scores after controlling for self esteem, perceived family attitudes and behaviour, and perceived peer attitudes and behaviour.
- (2) the strength of relationships between TV viewing scores and alcohol advertisement knowledge (at implicit, abstracted verbal and explicit levels).
- (3) the strength of relationships between alcohol advertisement knowledge scores (at implicit, abstracted verbal and explicit levels) and children's ABEC scores

The effect of moderator variables on these relationships was also tested. The findings are presented in three separate tables, Tables 8.1, 8.2. and 8.3.

**Table 8.1 The effect of TV viewing on ABEC scores after controlling for IAM, FAMATT, FAMBEH, PEERATT, PEERBEH**

	ABEC1			ABEC4			ABEC7					
	beta	SE	R <sup>2</sup> change	sig. of R <sup>2</sup> change	beta	SE	R <sup>2</sup> change	sig. of R <sup>2</sup> change	beta	SE	R <sup>2</sup> change	sig. of R <sup>2</sup> change
<b>All</b>												
TVtot1	.06	.08	.003	p = .48	.13	.08	.017	p = .14	.14	.08	.02	p = .18
TVtot4					.05	.08	.002	p = .58	.17	.08	.02	p = .08
TVtot7									.17	.08	.02	p = .09
<b>Girls only</b>												
TVtot1	.1	.12	.01	p = .38	.27	.11	.07	p < .05	.12	.11	.02	p = .33
TVtot4					.1	.15	.008	p = .48	.11	.15	.009	p = .51
TVtot7									.07	.11	.005	p = .59
<b>Boys only</b>												
TVtot1	.05	.11	.002	p = .68	.03	.11	.001	p = .80	.15	.12	.02	p = .41
TVtot4					.09	.1	.008	p = .44	.24	.1	.05	p = .08
TVtot7									.28	.11	.07	p < .05
<b>Watch TV alone</b>												
TVtot1	-.06	.12	.003	p = .63	-.08	.12	.005	p = .58	-.03	.1	.001	p = .86
TVtot4					-.03	.16	.001	p = .87	.32	.2	.08	p = .23
TVtot7									-.26	.1	.05	p = .11
<b>Watch TV with adult</b>												
TVtot1	.14	.1	.02	p = .18	.26	.1	.07	p < .05	.23	.11	.05	p = .08
TVtot4					.09	.09	.009	p = .36	.12	.09	.01	p = .27
TVtot7									.35	.11	.1	p < .01

### *TV viewing habits and ABEC scores*

In Table 8.1 the relationship between television viewing habits (TVtot) and ABEC scores was assessed in a multiple regression, whilst controlling for self esteem (IAM), family attitudes and behaviour (FAMATT, FAMBEH) and peer attitudes and behaviour (PEERATT, PEERBEH). This was to highlight whether there were any direct effects of television viewing habits on ABEC scores, thus the  $R^2$  change reported is for the effect of television viewing over and above the other variables. The findings suggest that, overall, there is comparatively little effect of watching television on ABEC scores. There were no effects for the sample as a whole, although there were some moderator effects. For girls there was a predictive effect of television viewing at 9 years on their alcohol expectancies at 11 years,  $\beta = .27$ ,  $R^2$  change = .07,  $p < .05$ . For boys there was a concurrent effect of watching television on their alcohol expectancies when they were 13 years,  $\beta = .28$ ,  $R^2$  change = .07,  $p < .05$ . Finally, for children who watched television with an adult there was a predictive effect of watching television at 9 years on their alcohol expectancies at the age of 11 years,  $\beta = .26$ ,  $R^2$  change = .07,  $p < .05$ , and a concurrent effect of watching television with an adult at the age of 13 years,  $\beta = .35$ ,  $R^2$  change = .1,  $p < .01$ .

In Table 8.2 the relationship between television viewing habits and alcohol advertisement knowledge is presented.

**Table 8.2. Pearson correlation coefficients (1 tailed) between television viewing (TVtot) and the three levels of alcohol advertisement knowledge: IMP (implicit), ABS (abstracted verbal) and EXP (explicit)**

	N	T1			T4			T7		
	n	IMP	ABS	EXP	IMP	ABS	EXP	IMP	ABS	EXP
<b>All</b>										
TVtot1	123	.17*	.12	.25**						
TVtot4	116				.29**	.28**	.2*			
TVtot7	100							.13	.12	.2**
<b>Girls only</b>										
TVtot1	60	.28*	.15	.16						
TVtot4	56				.3*	.26*	.07			
TVtot7	48							-.09	-.06	.05
<b>Boys only</b>										
TVtot1	63	.06	.65	.3**						
TVtot4	60				.27*	.27*	.27*			
TVtot7	52							.28*	.211 p=.06	.221 p=.06
<b>Watch TV alone</b>										
TVtot1	48	.09	-.18	.04						
TVtot4	46 <sup>†</sup> 27 <sup>††</sup>				.33*	.43*	.33*			
TVtot7	41 <sup>†</sup> 22 <sup>††</sup> 41 <sup>†††</sup>							.24	.38**	.43**
<b>Watch TV with adult</b>										
TVtot1	75	.23*	.25*	.35**						
TVtot4	70 <sup>†</sup> 89 <sup>††</sup>				.27**	.23*	.17			
TVtot7	59 <sup>†</sup> 78 <sup>††</sup> 59 <sup>†††</sup>							.057	-.065	.045

† sample size at T1. †† sample size at T4. ††† sample size at T7

\*p < .05, 1-tailed.

### *TV viewing habits and alcohol advertisement knowledge*

Table 8.2, presents the relationship between television viewing habits and alcohol advertisement knowledge at all levels (implicit, abstracted verbal and explicit) when explored with a one-tailed Pearson correlation coefficient. All relationships examined were concurrent. There were clearly a number of reliable correlations, as indicated on the table, although of the 24 significant correlations the majority were comparatively low with only seven coefficients greater than .3.

In a similar analysis of the relationship between television viewing habits and non-alcohol advertisement (at all three levels), however, only eight significant correlations were identified. These were: for all children at T7,  $r = .18$ ,  $n = 100$ ,  $p < .05$  for implicit knowledge,  $r = .21$ ,  $n = 100$ ,  $p < .05$  for explicit knowledge; for boys at T7 (13 years) for implicit knowledge,  $r = .25$ ,  $n = 52$ ,  $p < .05$ ; and for explicit knowledge for children who watched with an adult at T1,  $r = .22$ ,  $n = 75$ ,  $p < .05$ . For children who watched alone at T1, a negative correlation between television viewing and abstracted verbal advertisement knowledge for children who watched alone at T1 ( $r = -.367$ ,  $n = 48$ ,  $p < .01$ ) changed to become positive at T7 for all levels of non-alcohol advertisement knowledge; with  $n = 41$ ,  $r = .32$ ,  $p < .05$ ,  $r = .31$ ,  $p < .05$  and  $r = .34$ ,  $p < .05$  for implicit, abstracted verbal and explicit knowledge respectively. This difference between television viewing habits and knowledge of advertisements for the two different types of product could imply that the alcohol advertisements hold greater attraction, or importance, for the children than non-alcohol advertisements. By the age of 13, however, it seems that children who watch television alone are more likely to remember the advertisements whatever the product.

The following table, Table 8.3, presents the findings from analysis of the relationship between alcohol advertisement knowledge and alcohol expectancies.

**Table 8.3. Pearson correlation coefficients (1-tailed) between alcohol advertisement knowledge (IMP, ABS & EXP) and ABEC scores**

	n	T1			T4			T7		
		IMP	ABS	EXP	IMP	ABS	EXP	IMP	ABS	EXP
<b>All</b>										
ABEC1	123	.06	.07	.04						
ABEC4	116	.05	.08	-.002	.1	.12	.08			
ABEC7	100	.06	.008	.01	.20*	.15	.11	-.09	-.12	-.13
<b>Girls only</b>										
ABEC1	60	.12	.13	.08						
ABEC4	56	.09	.14	-.002	.23*	.26*	.24*			
ABEC7	48	-.09	-.11	-.15	.23	.14	.03	-.08	-.02	-.04
<b>Boys only</b>										
ABEC1	63	.000	.007	.005						
ABEC4	60	.02	.05	.02	.03	.04	.001			
ABEC7	52	.19	.13	.12	.19	.16	.18	-.08	-.19	-.18
<b>Watch TV alone</b>										
ABEC1	48	-.11	-.05	.15						
ABEC4	46 <sup>†</sup> 27 <sup>††</sup>	.02	.07	.09	.2	.005	-.12			
ABEC7	41 <sup>†</sup> 22 <sup>††</sup> 41 <sup>†††</sup>	-.08	-.09	.15	.38*	.27	.23	-.12	-.19	-.24
<b>Watch TV with adult</b>										
ABEC1	75	.15	.11	-.03						
ABEC4	70 <sup>†</sup> 89 <sup>††</sup>	.06	.08	-.05						
ABEC7	59 <sup>†</sup> 78 <sup>††</sup> 59 <sup>†††</sup>	.11	.02	-.05	.16	.13	.08	-.07	-.09	-.08

† sample size at T1. †† sample size at T4. ††† sample size at T7

\*p < .05 1-tailed.



### *Alcohol advertisement knowledge and ABEC scores*

The final pre-modelling analyses are presented in Table 8.3. In this, both concurrent and predictive relationships between alcohol advertisement knowledge and ABEC scores are investigated, again using a one-tailed Pearson correlation. Significant correlations only occur on three occasions: concurrently there is a relationship at T4 for girls only between their advertisement knowledge, at all levels, and their ABEC scores. In terms of predictive relationships, there is one between implicit knowledge of alcohol advertisements at T4 on T7 ABEC scores for all children,  $r = .2$ ,  $n = 100$ ,  $p < .05$ , and one, again for implicit knowledge of alcohol advertisements at T4 on T7 ABEC scores for children who watch television alone,  $r = .38$ ,  $n = 22$ ,  $p < .05$ .

### *Pre-modelling analyses: summary*

These pre-modelling analyses have proved useful in identifying where and when relationships exist. Thus, whilst there was little direct effect of TV viewing habits on ABEC scores, the same TV viewing habits were, nonetheless, significantly related to alcohol advertisement knowledge, and this was particularly noticeable at the T4 data collection point. On this occasion there were nearly twice as many significant relationships than at either T1 or T7. However, alcohol advertisement knowledge was only weakly related in terms of predicting later ABEC scores at one time only, the T4 data collection point. This was the case for all children and for those children who watch television alone.

## **Modelling the data**

### *Model 1*

In view of the weak correlation coefficients identified in the preliminary analyses, particularly between alcohol advertisement knowledge and ABEC scores, it was decided to model only the data from T4 to T7 for all participants ( $n = 100$ ) as there was a significant, albeit low, Pearson correlation coefficient between implicit alcohol advertisement knowledge and ABEC scores. It was decided not to model the data for the only other significant predictive relationship identified, for 11 year old children

who watch alone, as the sample size ( $n = 22$ ) was too small as to be considered reliable for structural equation modelling. The data was modelled using LISREL (Joreskog & Sorbom, 2003), a structural equation modelling programme, and used the covariance matrix in Table 8.4.

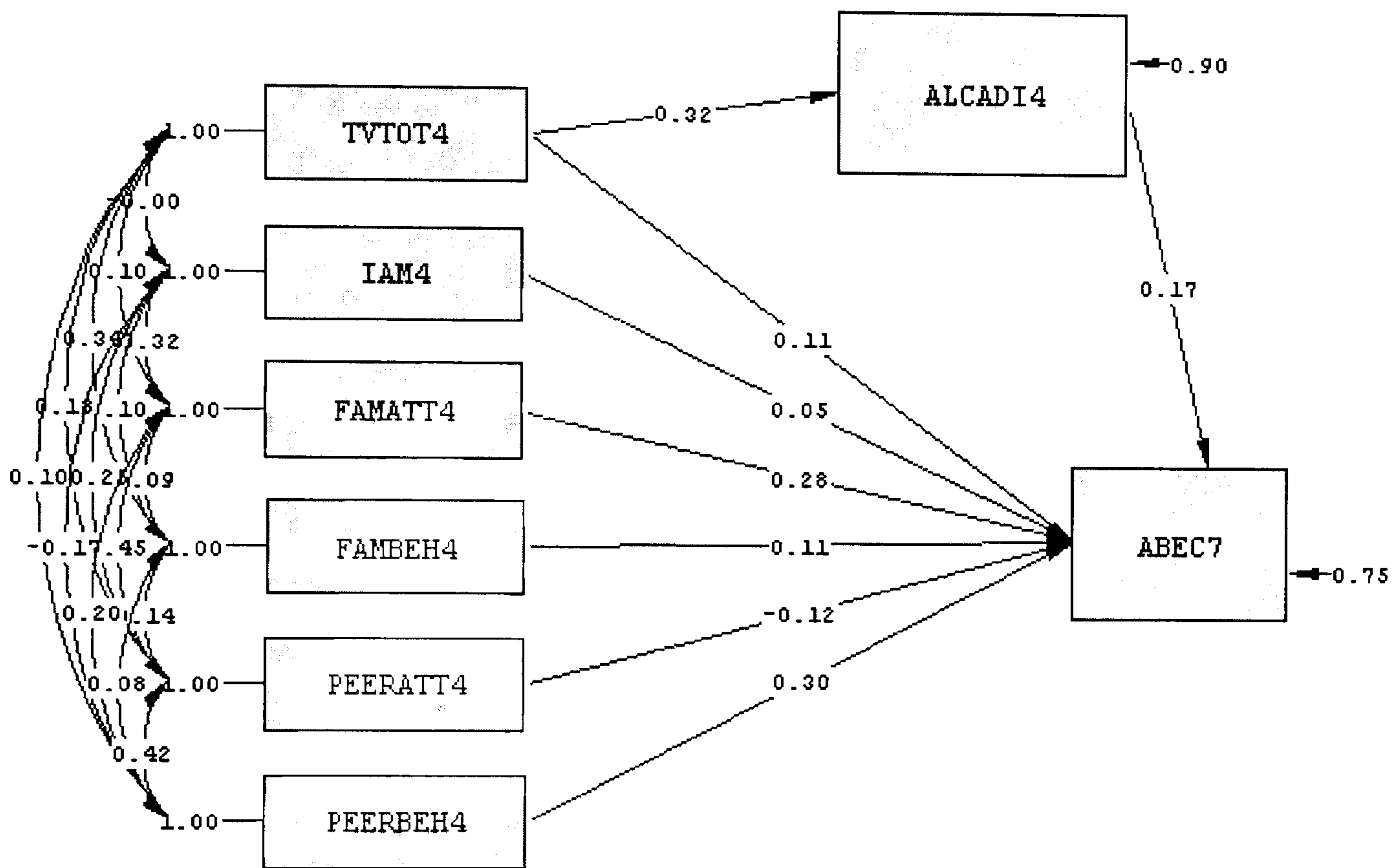
**Table 8.4 Covariance matrix of measures for modelling: ABEC score at T7, all other data from T4**

	ABEC7	TV	IAM	Alcohol Advert Implicit	Family attitude	Family beh- aviour	Peer attitude	Peer beh- aviour
ABEC7	33.085							
TV viewing score	9.863	50.121						
IAM	-4.457	-0.570	387.109					
Alcohol Advert Implicit	2.101	4.026	3.104	3.249				
Family attitude	1.914	0.802	-7.220	-0.031	1.277			
Family behaviour	1.244	2.669	2.225	0.137	0.117	1.197		
Peer attitude	1.153	1.638	-6.114	-0.055	0.643	0.192	1.581	
Peer behaviour	2.429	0.958	-4.372	-0.113	0.303	0.114	0.715	1.807

The variables comprised the ABEC scores at T7, and the TVTOT, ALCADI, FAMATT, FAMBEH, PEERATT, PEERBEH and IAM scores at T4. Preliminary analysis within this programme produced measures of multivariate normality. Ideally, multivariate normality would be assumed for structural equation modelling, however this was not the case with the data, with skewness = 15.71,  $p < .001$ , kurtosis = 90.23,  $p < .001$  and chi square of skewness and kurtosis = 60.70,  $p < .001$ . In view of this the option of maximum likelihood estimation was selected for testing the model. Structural equation modelling offers a variety of estimation techniques, e.g. unweighted least squares, generalised least squares, however maximum likelihood is perhaps the most widely used because, as Diamantopoulos and Sigauw (2000) suggest, it “provides consistently efficient estimation under the assumption of multivariate normality and is relatively robust against moderate departures from the latter” (p.56). Whilst alternative estimation techniques may be better able to cope

with non-normal distributions, sample sizes in excess of 1000 are recommended and clearly this is not the case with this sample. The outcome of modelling the data can be found in Figure 8.2 which gives the coefficients calculated in LISREL.

**Figure 8.2. Model 1: recursive path model showing the standardised solution for parameter estimates of potential influences at 11 years on ABEC scores at 13 years.**



TVTOT = TV viewing habits	PEERATT = peer attitude
IAM = self-esteem score	PEERBEH = peer behaviour
FAMATT = family attitude	ALCADI = implicit alcohol advertisement knowledge
FAMBEH = family behaviour	ABEC = alcohol beliefs and expectancies in childhood

### *Goodness of fit*

A number of goodness of fit indices suggest that the model is a plausible fit,  $\chi^2 = 1.74$ ,  $df = 5$ ,  $p = .88$ ,  $RMSEA = 0$ ,  $NFI = .99$  and  $GFI = 1.0$ . However, as indicated earlier, this infers only that it is not disconfirmed. The model accounted for 25% of variance in the ABEC scores. Television viewing scores accounted for 10% of variance in implicit knowledge of alcohol advertisements.

### *Parameter estimates*

Examining the parameter estimates, only three were significant: perceived family attitude (FAMATT4) and perceived peer behaviour (PEERBEH4) at 11 years on alcohol expectancy (ABEC7) at 13 years, and television viewing (TVTOT4) concurrently on implicit knowledge of alcohol advertisements (ALCADI4). T-values are indicated in Table 8.5 and need to exceed +/-1.96 to be significant.

**Table 8.5. Standardised parameter estimates for Model 1**

<b>Relationship</b>	<b>Standardised parameter estimate</b>	<b>Standard error</b>	<b>t-value</b>
ALCADI4 to ABEC7	0.17	0.30	1.79
TVTOT4 to ABEC7	0.11	0.08	1.12
IAM4 to ABEC7	0.05	0.03	0.50
FAMATT4 to ABEC7	0.28	0.53	2.71*
FAMBEH4 to ABEC7	0.11	0.51	1.10
PEERATT4 to ABEC7	-0.12	0.51	1.05
PEERBEH4 to ABEC7	0.30	0.43	3.03*
TVTOT4 to ALCADI4	0.32	0.03	3.21*

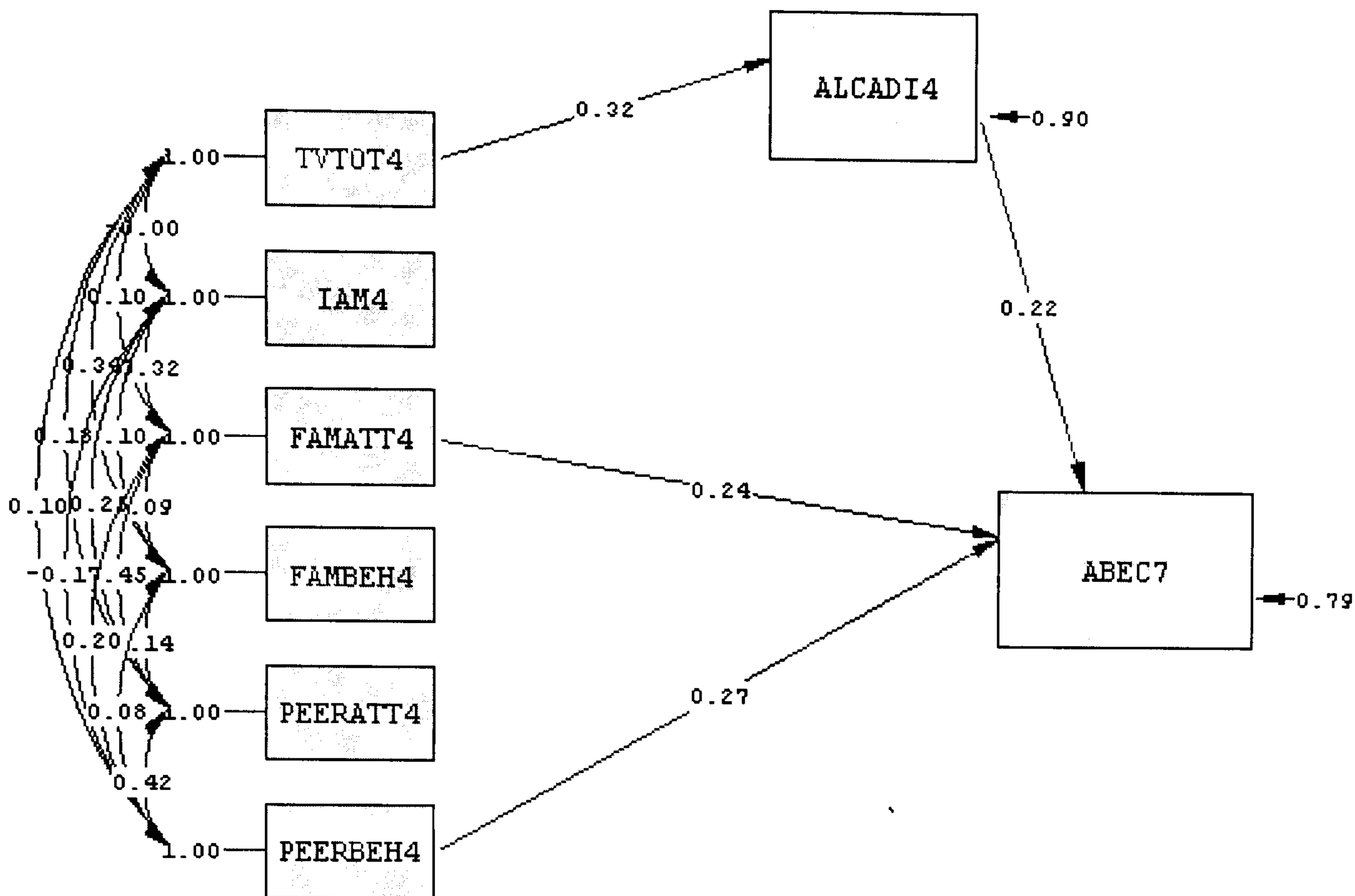
\*significant t-value

Clearly, a number of predictor variables were found to be poor predictors, i.e. the direct effect of television viewing, self-esteem, family behaviour and peer attitudes. In view of this it was decided to test a modified, or trimmed, model by fixing the paths of the unreliable predictors to zero.

### *Model 2*

In view of the significant relationship between TVTOT4 and ALCADI4 and the non-significant, but reasonably high t-value of the parameter between ALCADI4 and ABEC7, it was decided to retain the latter within the model, especially as this was of particular interest. Results of estimation of the trimmed model are shown in Figure 8.3.

**Figure 8.3. Model 2: recursive path model showing the standardized solution for parameter estimates of potential influences at 11 years (T4) on ABEC scores at 13 years (T7).**



Key:

TVTOT = TV viewing habits	PEERATT = peer attitude
IAM = self-esteem score	PEERBEH = peer behaviour
FAMATT = family attitude	ALCADI = implicit alcohol advertisement knowledge
FAMBEH = family behaviour	ABEC = alcohol beliefs and expectancies in childhood

### ***Goodness of fit***

A number of goodness of fit indices suggest that this model, too, is a plausible fit,  $\chi^2 = 6.73$ ,  $df = 9$ ,  $p = .66$ ,  $RMSEA = 0$ ,  $NFI = .95$  and  $GFI = 0.98$ . Model 2 accounted for 21% of variance in ABEC scores, with television viewing scores accounting for 10% of variance in implicit knowledge of alcohol advertisements.

### ***Parameter estimates***

In the modified model all the parameters for the direct predictors were significant as indicated in Table 8.5

**Table 8.6. Standardised parameter estimates for Model 2**

<b>Relationship</b>	<b>Standardised parameter estimate</b>	<b>Standard error</b>	<b>t-value</b>
ALCADI4 to ABEC7	0.22	0.30	2.37*
FAMATT4 to ABEC7	0.24	0.48	2.57*
PEERBEH4 to ABEC7	0.27	0.40	2.92*
TVTOT4 to ALCADI4	0.32	0.03	3.21*

\*significant t-value

The findings suggest that there are significant positive directional relationships between perceptions of family attitudes, perceptions of peer behaviour and implicit knowledge of television alcohol advertisements at the age of 11 and positive alcohol expectancies at the age of 13. There is a small indirect effect of television, with a standardised parameter estimate of .07. Based on MacCallum, Browne, & Sugawara's (1996) power estimates, the power for a close fitted model based on a sample size of 100 and 9 degrees of freedom is .16, or 16%.

## **Discussion**

Using longitudinal data gathered over a three year period, this chapter presented the investigation of a possible directional relationship between childhood exposure to television alcohol advertising and later positive alcohol expectancies. The final model suggested that such a relationship exists, with greater alcohol advertising knowledge, at the age of 11 predicting more positive alcohol expectancies at the age of 13. Overall, the modelling process found that, in addition to alcohol advertisement knowledge, peer behaviour and family attitudes experienced at the age of 11 were significant predictors of alcohol expectancies in 13 year old adolescents. These factors accounted for a fifth of their expectancies and suggest that early informational, non-behavioural, experiences can have a significant long term impact on cognitive processes.

Interestingly, the non-advertising predictors of alcohol expectancies differed according to source. Thus, for family influence it was attitude and not behaviour that was influential, whereas this was reversed for peer influence in that behaviour had an effect. However, the concern of this thesis was the potential impact of television alcohol advertising in childhood.

The findings of this model indicate that not only was greater exposure to alcohol advertising on television at the age of 11 related to an increase positive alcohol expectancies at the age of 13, but that there was a mere exposure effect. It seems that recognising an alcohol advertisement at an implicit level, without greater, or more explicit, knowledge of the content, is sufficient to be influential. It could be argued that non-alcohol advertisements might have a similar effect. However, the finding that watching television increases alcohol advertisement knowledge far more than non-alcohol advertisement knowledge suggests this is not the case. Children appear to be responding to and absorbing information from alcohol advertisements specifically. In other words, they are learning from them and this learning appears to extend to an increase in positive alcohol expectancies, not simply brand information. Moreover, previous studies which have relied on children naming advertisements are likely to have underestimated the effect of alcohol advertising.

This is only a brief resume of the findings as the longitudinal study as a whole, and its implications, are considered in greater depth in the general discussion at the end of this chapter. However, before that it is important to be aware of the limitations of this model and the modelling process.

The main shortcoming of this model is its power, at only 16%, which arises from the comparatively small sample size. Nonetheless, this does not mean that the model should be discarded, simply that the findings should be treated with caution. Also, the preliminary analyses suggested that some of the relationships were not particularly strong, with little direct effect of television viewing on alcohol expectancies and only a small predictive relationship between alcohol advertisement knowledge in 11 year old children and the same children's alcohol expectancies when they were 13 years old. The differences in advertisement knowledge by

school, identified in Chapter 7, present some difficulties, too, in that they suggest that knowledge of alcohol advertising may not be the most appropriate measure of exposure to alcohol advertising. However, this may underestimate effect rather than suggest a Type 1 error. For example, if there is a mere exposure effect then an alternative measure, such as grading alcohol advertisements on appeal and attractiveness, may increase the relationship.

As far as the modelling process is concerned, structural equation modelling is a powerful multivariate analysis technique. However, it is not without its limitations. For example, the issues of sample size, attributing causality and the requirement for multivariate normality of the data have already been discussed in this, and earlier, chapters. As a technique it deals with aggregate data, and thus provides no information about individual cases. Also, whilst a good fit of a model is desirable, there may be other, equivalent, models which also fit the data (Diamantopoulos & Siguaw, 2000; Maruyama, 1998; Statsoft, 2004). Finally, model modification in itself poses another potential problem, in that the strict constraints effected in post hoc tests of analysis of variance are not so apparent in confirmatory covariance analysis (Cliff, 1983; Maruyama, 1998).

Some of these limitations could certainly be remedied in another study. Perhaps the most beneficial change would be to increase the sample size substantially, as this would provide a more robust model with greater power and allow for subgroups of the sample to be modelled. Secondly, reconsideration should be given to the use of alcohol advertisement knowledge as the main alcohol advertisement related predictor. A measure of liking, as a measure of familiarity, may prove to be more effective. Thirdly, it may be worth investigating self-esteem as a moderator variable rather than as a predictor variable, using high, medium and low levels. Finally, the issue of investigating individual data rather than aggregate data needs to be considered in a different way altogether, as this may prove beneficial in identifying specific individuals who are at risk of future alcohol abuse.

Whilst the last three paragraphs bring a cautionary note to the findings, the model nevertheless provides a starting point for considering how exposure to alcohol advertising in childhood impacts on long term beliefs and expectancies. The mere



exposure effect suggests that care should be exercised over the amount of alcohol advertising shown on television in the early evening.

### **General discussion: the long term influence of alcohol advertisements**

The last four chapters, including this one, have focused on the long term effects of television alcohol advertisements seen in childhood. As a result a number of new measures have been developed which proved to be reliable, valid and appropriate for use with children in the 9 to 13 year age group, and these are discussed in more detail in Chapter 9. From the data gathered from these measures children's beliefs and positive expectancies about alcohol were tracked over a three year period, from the age of 9. At the same time, and tracked over the same period, the extent to which these expectancies were influenced by a number of different factors was investigated. The factors were identified as known potential contributors to alcohol expectancies and alcohol consumption and they included family and peer attitudes (e.g. Aas et al., 1998; Cumsille et al., 2000), personal experience with alcohol (e.g. Dunn, 1996), self-esteem (e.g. Tinsley, 1992) and, pertinently, exposure to alcohol advertising on television (e.g. Austin & Meili, 1994).

Briefly, the findings indicate that children's positive alcohol expectancies increase over time and that they are influenced by family attitudes, peer behaviour and, to a slightly lesser extent, exposure to alcohol advertisements. Personal experience with alcohol appears to interact with alcohol expectancies in that children who had consumed a whole alcoholic drink had higher alcohol expectancies than those with little or no experience and this concurs with findings by Aas (1998). Whilst this may arise as a result of the pharmacological effects (Christiansen et al., 1982), there may also be some interaction with family attitudes. The same children also tended to have more awareness of alcohol advertisements on television. However it is difficult to ascertain the direction of causality for this particular factor as the samples were too small to be used in structural equation modelling.

As indicated in the discussion in Chapter 7, the differences in the knowledge of advertisements for alcohol and non-alcohol products suggest that children may be learning from alcohol advertisements. Whilst there is growth in their pre-explicit and explicit knowledge of alcohol advertisements over time, this is not the same for advertisements for non-alcohol products. However, around the age of 11, at T4, this situation appears to change with the patterns of knowledge for both types of product becoming similar. At the same time as this change in pattern occurs for advertising, it also appears to be, for some children at least, a period of change in how they think about alcohol. It is at this point that children's positive alcohol expectancies increase the most and when there appears to be a relationship between advertisement knowledge and alcohol expectancies. It suggests that this may be a transitional stage with alcohol knowledge and alcohol advertising both undergoing representational redescription to a more explicit level. This could account for the growth in expectancies, with the advocacy message of the advertisement becoming as influential, or more influential, than children's negative beliefs about alcohol and confirms the mediator role of alcohol advertising.

This longitudinal study is the first of its kind in terms of the range of ages and the measures it has encompassed. In investigating children's, as opposed to adolescent, alcohol beliefs and expectancies it has shown that such beliefs are already developing in childhood and, therefore, this should be taken into consideration in terms of alcohol education. Whilst some limitations of the study have already been highlighted, this study nonetheless represents an important step forward in understanding how children's thinking about alcohol develops in relation to a number of factors, including alcohol advertisements seen in childhood. Moreover, the rich data that have been gathered merit further investigation. For example, understanding how alcohol expectancies develop could provide an insight into how alcohol education could be tailored to children's thinking in an attempt to reduce the incidence of abusive drinking.

## Chapter 9

### Conclusions

This thesis set out to take a theoretically driven approach to the investigation of children's thinking about alcohol advertisements on television and to consider whether and how such advertisements influence children's representations of alcohol and later alcohol behaviour. A review of the existing literature in this area revealed a distinct lack of research, particularly with children below the age of 10, a need for methodology to be underpinned by theory and a failure to date to establish the direction of causality. Accordingly, three aims were identified at the end of Chapter 1 and these were:

1. to develop measures to investigate young children's thinking about alcohol advertisements on television which take into account current developmental theories and which recognise the complex nature of knowledge and its development.
2. investigate knowledge, perceptions and responses of children below the age of 10 years to alcohol advertisements on television
3. conduct a longitudinal study to investigate how children's beliefs and ideas about alcohol develop in relation to television alcohol advertising, thereby identifying the potential contribution of television alcohol advertising to children's alcohol expectancies relative to other known influences.

These aims were met in a series of complementary studies. Three cross-sectional studies, involving a total of 411 children aged 7 to 10 years, investigated the knowledge and thinking about television alcohol advertisements of children at

implicit, pre-explicit and explicit levels. These studies are among the first to provide evidence of how children under the age of 10 years respond to alcohol advertising. In addition to the cross-sectional studies, a further group of over 100 children took part in a longitudinal study. This tracked children over a period of 3 years, re-visiting them every 6 months to collect data on a range of measures including their positive alcohol expectancies and the potential influences on these expectancies. The study started when the children were 9 years old, prior to the onset of drinking. The data for the longitudinal study alone was collected in 2298 questionnaires. Thus the studies provide a wealth of knowledge in a topical and seriously under-researched area.

This chapter summarises the findings in relation to the aims and considers the limitations of the studies. The findings are then reviewed in terms of the role of alcohol advertising in relation to the development of alcohol beliefs and expectancies, the benefits of underpinning the methodologies used in the studies with theory and consideration is also given to how television alcohol advertising exerts its influence on children. The more practical outcomes from the research are discussed in terms of the regulation of the content of alcohol advertising and how the findings from the cross-sectional studies have already had an impact on advertising policy. Finally, proposals are made for the future direction of this research.

### **Aim 1: the development of measures**

In Chapter 1, theoretical issues regarding the development of knowledge in children were discussed with a view to developing methodologies which would accurately represent children's knowledge. Whilst Bandura's cognitive social learning theory (Bandura, 1977) and Vygotsky's sociocultural approach (Vygotsky, 1978) consider development from more general perspectives, the aim in these studies was to accurately portray children's thinking and beliefs, therefore a cognitive developmental approach was taken. Within cognitive developmental theories, the age-stage stance adopted by Piaget (Piaget, 2000), and by neo-Piagetians, e.g. Case (1992), was criticised, as current thinking recognises the importance of the development of domain specific knowledge rather than the overall changes suggested

by Piaget which lead to qualitatively different ways of thinking at different ages. Thus, a domain specific view of development was adopted; in other words, knowledge development in particular areas, i.e. alcohol and advertising in this instance.

The methodologies employed in the studies in this thesis were developed based on the theoretical assumptions of the importance of implicit knowledge, the implicit-explicit knowledge continuum, multiple representations of knowledge (e.g. cognitive variability) and the dynamic nature of learning (Karmiloff Smith, 1992; Reber, 1993; Siegler, 1996). Implicit learning, or learning without awareness, is regarded by Reber as “the default mode of learning” (p.25) and is becoming widely acknowledged as an important factor in understanding thinking and behaviour in adults (Berry & Broadbent, 1984; Perfect & Edwards, 1998; S. Shapiro, 1999). It is a particularly suitable approach for understanding children’s thinking about an area of advertising which is perceived as not being child-directed. However, whilst such knowledge is found to be robust and stable, even against injury, it is not usually available for verbal report.

Karmiloff-Smith’s Representational Redescription (1992) model recognises both that children have knowledge which they may not be able to express and the implicit-explicit continuum proposed by Reber (1993). As such, it incorporates a number of levels in the development of knowledge between the implicit level of knowledge and that which is fully explicit, or verbally available. Consequently, methodologies need to take into consideration that children may not be able to verbally report all that they know. It is worth re-capping at this point on the terms used to describe the different levels of knowledge referred to in this chapter.

- Implicit knowledge – knowledge arising from implicit learning and which is encapsulated and therefore not available either intradomain nor interdomain, i.e. it can be used for repetitive behaviour only and cannot be integrated with other knowledge. It is stable and remains constant even after knowledge has been abstracted and redescribed.

- Pre-explicit knowledge – levels of knowledge between the encapsulated implicit knowledge and fully explicit knowledge. This knowledge may or may not be available for verbal report, but is not yet fully explicit and therefore does not demonstrate complete understanding. (This term covers the E1 and E2 levels in Karmiloff-Smith's (1992) RR model, and the implicit transition, abstract non-verbal, abstract verbal, explicit transition levels in Pine & Messer's (1999) proposed revisions to the original model)
- Explicit knowledge – level of knowledge development that is available for verbal report and reflects full understanding.

Alongside these assumptions, Siegler's (1996) overlapping waves model highlights how multiple representations of knowledge co-exist and the dynamic way in which knowledge develops. This is particularly useful when exploring knowledge which may be acquired implicitly, which is not considered to be relevant or important at one particular time, but which may become useful on a later occasion. For example, in this instance, that knowledge may be information which children may be learning from advertising about alcohol and its effect on behaviour. Therefore, in line with all of these assumptions and with the stated aims, the following new, reliable and valid measures were developed and produced for use in the programme of research for this thesis.

Two of the new measures developed were those for the cross-sectional studies. Firstly, the simple sorting or categorisation task (see Chapter 3) carried out on a computer proved valuable for accessing knowledge at an implicit or implicit transition level by requiring spontaneous responses and reducing cognitive processing to the minimum. The same task also highlighted how the addition of just a few extra features (i.e. by using a multiple choice question format) required more processing and, as a result, knowledge at a more explicit, although still pre-explicit, level.

The second measure developed in relation to the cross-sectional studies was the story style paradigm reported in Chapter 4. In this, groups of children heard the same short story with small changes to the content of the story. Differences in response to

the changes in content were measured through multiple choice evaluative questions posed about the characters in the story. Previously used in an adult social psychology experiment (Crisp et al., 2001), this type of measure appears particularly suitable for developmental studies as it is a simple and engaging task and one that appears to tap successfully into pre-explicit knowledge.

A number of new measures were developed for the longitudinal study. The Children's Alcohol Inventory not only incorporated questions with regard to the potential influences of family, peers and personal experience on alcohol beliefs, but also included a new measure of alcohol beliefs and expectancies in childhood (ABEC) suitable for use with children as young as 9 years old. Unlike previous alcohol expectancy measures used in advertising studies with children which often comprised very few questions, this measure was comprehensive in that the 17 questions reflected the subscales of the original adolescent alcohol expectancy measure, the AEQ-A (Brown, Christiansen et al., 1987). Moreover it acknowledged how knowledge develops by providing the children with a range of responses through the use of a Likert scale, rather than the dichotomous 'yes' or 'no' options originally in the AEQ-A. A new self-esteem questionnaire, the Ideas About Me (IAM) scale, was also developed and was found to be comparable to and easier to administer than the Harter (1982) Self-Perception Scale, and was more accessible by children. Finally, the development of the Television Advertising Awareness Questionnaire measured children's increasing levels of knowledge by tapping into implicit, pre-explicit and explicit knowledge of advertisements. This measure demonstrates the importance of measuring different levels of knowledge and suggests that being able to name an advertisement is not necessarily the best way to assess awareness of advertising. Moreover, existing research has frequently only presented children with alcohol advertisements (e.g. Aitken, Leather et al., 1988; Grube & Wallack, 1994; Waiters et al., 2001) which bias the possibility of a correct response. As with the cross-sectional studies, the findings also highlight the importance of including advertisements for non-alcoholic products as a comparison for knowledge of alcohol advertisements.

The development of the new measures for both the cross-sectional studies and the longitudinal study represent a substantial addition to measures suitable for use with

children in this area of research. At the same time, those developed for the cross-sectional studies demonstrate, in their findings, the importance of tapping into different 'ways' of knowing, or different levels of explicitation. As a result they offer an insight into how children develop knowledge within a specific domain, in this case that of alcohol and alcohol advertisements. At the implicit level in the simple categorisation study, age-related differences were reduced or eliminated. In the more complex questions in the categorisation study and in the story style paradigm, pre-explicit knowledge indicated the beginnings of age related differences. Finally, the verbal report in the interview study revealed clear differences according to age. Nonetheless the verbal report by the eldest children in the interview study cannot be classed as fully explicit (i.e. E3) as it demonstrated similar conflict to that found in other interview studies. As a result, verbal reports of ideas and beliefs about advertisements appeared to be hindered by the nature of the product being advertised and the possible reasons for this are discussed later in this chapter.

Whilst different in nature, in that they were all questionnaire based, the measures developed and used for the longitudinal study represent a comprehensive approach to understanding the potential long term influence of exposure to alcohol advertisements in childhood on later alcohol behaviour. Moreover, the use of multiple choice questions provides a means of exploring pre-explicit knowledge, i.e. it does not require self-production of knowledge, but taps into existing beliefs via processes such as recognition. The findings from the Television Advertising Awareness Questionnaire clearly demonstrate the importance of providing choice for children and not relying upon their ability to produce responses via recall.

Thus, the development of measures for use with children as young as 7 years old for the cross-sectional studies and for children aged 9 and above for the longitudinal study not only meets the needs of the stated aims, but provides robust methodologies for future research in this area. A summary of the findings in the following two sections confirm the importance of underpinning research methods with developmental theory in order to understand children's thinking about alcohol advertisements.



## **Aim 2: the appeal of alcohol advertisements and their influence on 7 to 10 year old children**

Previous research in this area has been lacking with very few studies undertaken with children (e.g. Aitken, Eadie, Leather, McNeill, & Scott, 1988; Austin & Meili, 1994; Grube & Wallack, 1994) and only five with children under the age of 10 (Austin & Johnson, 1997a; Austin & Knaus, 2000; Austin & Nach Ferguson, 1995; Dunn & Yniguez, 1999; Waiters et al., 2001). The focus, instead, has been on, and continues to focus on, adolescents and how alcohol advertising influences their consumption, i.e. the concurrent effect of advertising (Marsden et al., 2005; Slater, Rouner, Beauvais, Murphy, & et al., 1996; Unger et al., 2003). Moreover the research has frequently relied on explicit knowledge only produced in interviews and focus groups.

The findings from the set of studies presented in this thesis must call into question the extent to which previous research presents an accurate picture of the influence of television alcohol advertising on children. Firstly, by starting with children aged nine to ten years old, or even twelve, previous studies (e.g. Dring & Hope, 2001; Grube & Wallack, 1994; Waiters et al. 2001) fail to recognise how ideas are forming at a younger through the effects of incidental exposure to television alcohol advertising in childhood.

Secondly, very few studies have taken account of what is currently known about the development of knowledge in children. Consideration of only that which is verbally reportable by children and young adolescents as in all of the focus group and interview studies (e.g. Aitken, Leather et al. 1988; Waiters et al. 2001) fails to access all available knowledge resulting in an incomplete and inaccurate reflection what children are really thinking. The picture presented by previous research suggests that children around the age of 10 years old do not find alcohol advertisements attractive in general, however, the research presented in this thesis which taps into alternative 'ways' of knowing indicates that this is not the case at all. Further research in this area must take into account methodologies which accurately reflect what children know and think in order to provide information which is both valid and valuable. For example, the belief that children around 10 years old do not find alcohol

advertisements attractive may be the very reason why research has not been carried out with younger children.

The studies reported in this thesis have attempted to address the methodological and age-related issues that are highlighted above. Rather than consider the concurrent effect of alcohol advertising on adolescent behaviour, this thesis has chosen to focus on how such advertising influences developing beliefs and expectancies at an earlier age, in childhood. Such beliefs have been shown to be the precursors of later explicit knowledge and are therefore important in terms of understanding the development of positive alcohol expectancies and future alcohol behaviour.

The youngest children taking part in most of the existing research were frequently around 10 years old and, as already indicated, findings suggested that younger children often dislike alcohol advertisements or like them less than older children. As liking these advertisements has been shown to increase as children get older, this has previously been interpreted as being related to an increase in product salience as a function of age (e.g. Aitken, Eadie, Leather, McNeill, & Scott, 1988; Aitken, Leather et al., 1988; Waiters et al., 2001). However, the findings from the cross sectional studies reported in this thesis challenge this idea and suggest instead that children as young as 7 years old enjoy watching alcohol advertisements and find them appealing.

Three cross-sectional studies were undertaken with children, aged 7 to 10 and, as already described, used methodologies designed to tap into implicit, pre-explicit and explicit knowledge. Investigating the appeal of alcohol advertising to children and their understanding of it, an interview study called on children's explicit knowledge and was valuable in assessing the extent of the development of children's thinking about alcohol advertising. Not only did it reveal that the younger children in the study enjoyed watching alcohol advertisements and were familiar with them, but it also found some surprising age differences, in that the appeal of alcohol advertising appeared to decrease with age. It also provided the vocabulary and a basis for further cross-sectional studies.

A computer-based categorisation study investigated implicit and pre-explicit knowledge in this age group. Unlike the explicit knowledge displayed in the interview study, the findings from this study, using methods which tapped into implicit knowledge, suggest instead that there are no age-related differences in the appeal of such advertising; all ages found alcohol advertisements attractive. This study was particularly useful in revealing that the style of an advertisement, rather than the product it is advertising, appears to be influential in that children find advertisements which contain simple visual humour, cartoons and the use of animals or characters particularly appealing.

The third study, the story style paradigm, tapped into pre-explicit knowledge and suggested that when alcoholic drinks featured in the story children aged 8 to 9 evaluated the fictional characters less favourably than in the non-alcoholic condition. This suggests that beliefs about alcohol are developing early, around the age of 8 years old.

In contrast with the measures that tapped into implicit knowledge, age related differences were identified when pre-explicit knowledge was investigated, as in specific questions in the categorisation study and in the story style paradigm. These concerned temptation to try the advertised drinks and how people who drink alcohol are perceived. Surprisingly, the direction of change in attitude differed to that expected. As children in the 7 to 10 year old age group matured it appeared that they were less likely to express a desire to try alcohol and rated people who drank alcohol more negatively than did the younger children. This was attributed to the development of domain specific knowledge and an internalisation of societal values and is discussed more fully later in this chapter.

The issue of personal product salience from both the interview and the categorisation study raises the question of how well children understand advertising and selling. Responses relying on both explicit and pre-explicit knowledge suggest that children believe that only those who would use a product would watch the advertisement. However, this belief was complicated by the fact that some of the advertisements were deceptive in nature in either not displaying the product at all or only showing it

towards the final few seconds of the commercial. As a result, children sometimes found it difficult to identify the product being advertised.

These cross-sectional studies have yielded a wealth of new information about how children think about alcohol advertisements on television. Together they give an indication of how beliefs about alcohol and alcohol advertising are developing in childhood and have provided evidence that can inform advertising policy.

### **Aim 3: Tracking longterm changes in 9 to 13 year olds – the longitudinal study**

An issue that arises frequently in the existing literature on alcohol advertising and children and adolescents is that of establishing the direction of causality in studies which find a relationship between exposure to alcohol advertising and alcohol expectancies or consumption. In other words, are children and adolescents who are interested in alcohol those who pay more attention to alcohol advertising or is the alcohol advertising itself stimulating interest in alcohol? Longitudinal studies have been suggested as one possible way of determining causality and yet there appear to only have been two studies to date, both of which started with adolescents and which disregarded important factors, e.g. personal experience with alcohol and the effect of advertising on attitudes towards alcohol. The longitudinal study was therefore conducted in an attempt to determine the direction of causality whilst at the same time investigating changes over time both in children's attitudes towards alcohol and in a range of potential influences on these attitudes.

The findings from this research suggest that even a basic awareness of alcohol advertisements, i.e. simply recognising that the advertisement had been seen, at the age of 11 is positively related to alcohol expectancies in 13 year olds, although the effect of advertising on expectancies is less than that of parental attitudes and peer behaviours. Whilst children in the study had less awareness of alcohol advertisements than non-alcohol advertisements, alcohol advertisements were, nonetheless, popular with this age group as indicated by the nomination of favourite advertisements in the television questionnaire. Moreover, boys appeared to be more

aware of alcohol advertising, despite girls being more knowledgeable about advertisements generally.

The investigation of changes over time in the longitudinal study suggests that personal experience with alcohol also has an important role to play in the development of alcohol expectancies. Whilst positive alcohol expectancies increased over time, it was clear that children who had consumed a whole drink had higher expectancies of alcohol than those with less experience. Unfortunately the sample size of children with no experience meant that this factor could not be taken into consideration in the structural equation model. This would have been helpful in establishing more clearly the direction of causality.

Whilst the findings from the longitudinal study suggest a potential long term influence of alcohol advertisements on the alcohol expectancies of 11 year old children, the cross-sectional studies indicate that beliefs about alcohol are already developing in children aged 7 to 8. This age difference may arise from the nature of the beliefs and expectancies, i.e. knowledge as opposed to positive expectancies, or it may be due to the measure of exposure to alcohol advertisement used in the longitudinal study and this is discussed later in this chapter.

### **Limitations and constraints**

The studies were very successful in achieving their aims. Nevertheless, it is always important to consider the limitations of any study in order to put the findings into perspective.

The categorisation study set out to investigate children's thinking and beliefs about alcohol advertisements at an implicit level by minimising cognitive demands through a simple sorting task. No substantial difficulties were encountered with the categorisation study, although it should be remembered that, as with all of the studies in this programme of research, it relied on self-report. However, this need not be regarded as problematic as Zill (1986) found that children were rated as truthful as adults in self-report situations, although the truthfulness was reduced in the presence

of parents. As none of the research for this thesis was carried out in the presence of parents and some, such as this computer-based categorisation study, did not involve direct responses to an adult, social desirability responses were kept to a minimum and truthfulness was maintained.

The aim of the story style paradigm was to assess the influence of advertising on children's thinking by asking them to evaluate characters in a story, thus avoiding explicit responses. Whilst the story style paradigm worked well in principle, one difficulty with this study was the combination of finding strong gender differences in the way girls and boys rated characters and the fact that the gender balance in some groups was particularly uneven. Nevertheless, this could easily be remedied in any future replication. At the same time it would be helpful to include different brands in the branded version of the story to help ascertain whether the effects were generically driven or associated with brands.

As far as the longitudinal study is concerned, five issues are worth consideration: sample size, attrition, advertising measure, controlling for test effects, and the benefits and limitations of structural equation modelling. Firstly, a larger sample might have meant that closer assessment could have been made of the moderator variables within the structural equation model, e.g. personal experience with alcohol and whether the child watched television alone or in company. Nevertheless within the constraints of the study, i.e. one researcher, the sample was substantial, especially in view of the number of data collections from each child, whilst at the same time meeting the recommendations indicated in the literature (see, for example, Bentler & Chou, 1987; Ding et al., 1995; Stevens, 1996).

Secondly, attrition is a typical feature of longitudinal studies (Robson, 2002). The attrition rate for this study was, at nearly 19%, perhaps higher on the final data collection than might normally be expected, due to the unforeseen circumstances. Nevertheless in terms of assessing changes over time up to the 6<sup>th</sup> data collection, the attrition rate was very low at just below 10% over a period of three years.

Thirdly, and as indicated in Chapter 7, there were inconsistencies between the two participating schools in the findings for television viewing and the alcohol

advertisement awareness questionnaire. An alternative measure of exposure to alcohol advertisements should ideally be sought. For example, a familiarity judgement may be established more reliably through rating advertisements on attractiveness. Such a measure may also indicate an earlier influence of alcohol advertising.

Fourthly, the study would have benefited from including a control group providing an alcohol expectancy score taken on the final data collection. This would have provided information on the natural extent of increases in alcohol expectancies over time and as a measure of any test effects incurred as a result of completing the measure on more than one occasion. Regrettably this was not possible due to circumstances beyond the control of the researcher. Nevertheless, whilst this would have been valuable, the finding of a relationship between advertising awareness and alcohol expectancies suggests that advertising has an effect over and above the natural development of such expectancies.

Finally, as indicated in Chapter 8, structural equation modelling provides information on aggregate data only. Whilst this is valuable in providing an overview of a situation, there is merit in being able to single out cases in order to determine what is occurring for individuals.

Despite these limitations, the research carried out for this thesis offers a hitherto unresearched insight into the way children represent alcohol and television alcohol advertisements. This is explored in more detail in the next section.

### **The development of ideas: alcohol and alcohol advertising**

One of the benefits of theoretically underpinning this research and investigating knowledge at different levels of explicitness has been that the findings from both the cross-sectional and the longitudinal study together further our understanding of the development of children's ideas about alcohol and alcohol advertising. Furthermore they suggest that from as young as 7 years old to at least 13 years old is a period of transition in children's thinking about alcohol.

In the cross-sectional studies with children in the 7 to 10 year age group, the findings suggest that ideas and beliefs about alcohol become more negative over time. In the longitudinal study, with the older age group, 9 to 13, however this is reversed with alcohol expectancies becoming increasingly positive over time, particularly when children are 11 to 12. This situation can be explained in terms of the Karmiloff-Smith's (1992) Representational Redescription model. Thus, as children begin to develop knowledge in a particular domain, it is abstracted from implicit knowledge and redescribed, but in a more compact, reduced format. This can lead to children having rigid internal theories and making overgeneralisations. Hence children are implicitly aware that there is something 'different', perhaps wrong, about alcohol, e.g. they are not allowed to drink it, and as a result, when their knowledge is redescribed from an implicit level that may be one of the aspects that is abstracted. This perhaps reflects a kind of moral absolutism which is also seen in children's moral development around this time. This negative attitude towards alcohol can be seen both in the story style paradigm in 8 to 9 year old children and in the categorisation study where children aged 8 to 10 gradually become less tempted to try the product. However, the longitudinal study demonstrates how positive alcohol expectancies are beginning to emerge in some children at around 10 years old, and these continue to become increasingly positive as alcohol knowledge becomes more explicit. Thus, in terms of the U-shaped curves discussed in Chapters 2 and 3, the bottom of the learning curve for alcohol would be around the ages of 9 or 10 years old (Kuhn, 1995b; Strauss & Stavy, 1982).

Parallel to the domain specific development of alcohol knowledge is that of exposure to alcohol advertising. Alcohol advertising appears to be perceived as different to other non-alcohol advertising. Findings from all three studies suggest that at 7 years old knowledge is at an implicit or implicit transition level with knowledge being encapsulated and representations being unelaborated. However, it would be perhaps more appropriate to favour the implicit transition level, rather than the implicit level, as alcohol advertising appears to be treated differently to non-alcohol advertising, even by the youngest children, and this suggests awareness that it is for a specific product. As knowledge gradually becomes more explicit it appears difficult for children to be able to make responses about the advertisement without their



perceptions of alcohol influencing their judgements. Thus, 8 to 9 year old children are starting to rate more negatively people who drink alcohol when compared to people who consume non-alcohol drinks, and they are less likely to want to try the product. By the time children are 10 there is confusion in their verbal report indicating knowledge is still at pre-explicit level. This suggests, perhaps, that there is an interweaving of different levels of knowledge from two different domains with one domain, alcohol advertising, at a less explicit level than the other, alcohol. This is indicative of how cognitive variability and competition between multiple representations influence knowledge development.

This interweaving effect can also be found in the longitudinal study in the pattern of alcohol advertising awareness and the growth in positive alcohol expectancies.

Whilst there was a growth in children's alcohol advertisement knowledge from the ages of 9 to 11, it was interesting to see how the pattern changed after this time, and went on to resemble that of non-alcohol advertisement knowledge. When related to the pattern of development of alcohol expectancies, this change in pattern occurred at the same time as a substantial increase in positive expectancies, after a small, but brief decrease. This suggests that this is, perhaps, a time of representational redescription for some children in terms of alcohol advertising. One possibility for this occurrence may be that their knowledge of both the product and advertising have become sufficiently explicit, and separated, for the advocatory aspect of the advertising to start to play a role in increasing positive expectancies.

Whilst not advocating an age-stage stance, the findings from the studies in this programme of research suggest that it is possible to give some indication as to the extent of the development of the domain specific area of television alcohol advertising by age. It is important to remember, however, that each child is individual and therefore development of this knowledge may vary for a variety of reasons, e.g. in relation to the amount of television viewed. It should also be remembered that their implicit knowledge remains constant, it is only the abstracted knowledge which develops through explicitation, or Representational Redescription. Thus, from the data in this thesis, it would seem alcohol advertisement knowledge develops as follows.

- At 7 to 8 knowledge is at an implicit transition level – children recognise alcohol advertisements as different to non-alcohol advertisements. This is shown by the use of fewer adjectives and adjectival phrases when referring to alcohol advertisements as opposed to non-alcohol advertisements in the interview study.
- At 8 to 9 children’s knowledge is beginning to develop from the implicit transition level to an abstract non-verbal level as the appearance of age differences in the story style paradigm suggest. Whilst 7 to 8 year old children were likely to rate characters similarly across condition, by 8 to 9 clear and significant differences were found by condition indicating both awareness and an impact of the product on children’s thinking.
- At 9 to 10 knowledge is at abstraction non-verbal and abstraction verbal levels as indicated by the findings from both the more complex questions in the categorisation study and from the interview data. This was particularly noticeable in the confusion shown in the older children’s responses to alcohol advertisements in the interview study and in their difficulty in separating the product from the advertisement.
- At 10 to 11 knowledge is at abstracted verbal and explicit transition levels. This can be seen in the similarity of the abstracted verbal knowledge of alcohol advertisements at T3 and T4 of the longitudinal study and the growth in explicit knowledge from T3 to T4.
- At 11 to 12 knowledge is at explicit transition stage as indicated by the change in approach to alcohol advertisements in the longitudinal study. Around this age they are starting to perceive alcohol advertisements in a similar way to non-alcohol advertisements.
- At 12 to 13 knowledge is explicit as it resembles that for non-alcohol advertisements, although their knowledge is less than that for non-alcohol

advertisements. By this age they appear to be familiar with alcohol advertisements.

In terms of cognitive variability, the longitudinal study makes it clear that children are learning about alcohol from a number of sources, e.g. parents, peers, television advertising, etc. Not only is the input multiple, but children appear to have multiple representations about alcohol advertisements and the way they think about them changes over time. Moreover, the longterm influence of alcohol advertising suggests that, as in the skier analogy in Chapter 1, knowledge learned at one time may be employed at a later date when there is sufficient framework to accommodate it, i.e. knowledge development is dynamic (Siegler, 1996).

In brief, it appears that children are attracted to alcohol advertisements in childhood, when they are as young as 7 years old, perhaps even younger. At the same time their knowledge of alcohol is beginning to develop along with some positive alcohol expectancies. Around the age of 10 to 11, re-organisation of this domain specific knowledge leads to a much bigger increase in positive alcohol expectancies, one that appears to be related in part to alcohol advertisements on television. Interestingly, other research suggests that alcohol expectancies in relation to alcohol advertising peak in the late teens (Fleming et al., 2004) and do not increase after that. It seems that from childhood to the late teen years may be an important time in the growth of knowledge and positive alcohol expectancies arising from alcohol advertising. In view of the burgeoning alcohol-related problems in society today, this suggests that advertising may be one of a number of influences underlying the increases in abusive alcohol behaviour, particularly among adolescents and young adults. In terms of alcohol advertising research and regulation this means that it is important to be aware that children are taking in information and influences from television at an earlier stage than previous research with adolescents suggests. Children need to be included in future research and policymakers need to recognise children, not just adolescents, in their regulation of alcohol advertising.

## **Understanding children's thinking**

The findings from the studies in this research programme and their interpretation suggest that, as indicated in Chapter 1, knowledge and its development is complex. From Karmiloff-Smith's (1992) Representational Redescription theory and Siegler's (1996) cognitive variability perspective the research carried out has demonstrated that knowledge is not always available for verbal report and that to understand children's thinking about alcohol advertisements it is important to consider different ways of thinking and all levels of knowledge, not just the explicit ones. Methods must be used which also tap into their implicit and pre-explicit knowledge if an accurate picture is required. Knowledge at all three levels of development provide valuable information about the state of children's representations of domain specific knowledge. Such methods also indicate how that knowledge is developing.

This thesis has demonstrated the benefits of theory driven research in applied developmental psychology. By assessing knowledge at different levels of explicitness and by considering different ways of knowing, methodologies are improved resulting in data that more accurately represent children's thinking, and the interpretation of findings is enhanced. Within this thesis, the RR model and its domain general mechanism for domain specific change has been used to offer an interpretation of the development of cultural knowledge, rather than the more scientific learning strategies with which it is usually associated. As the findings from this research show it is possible to track representational changes over time in domain specific knowledge when approached in this way. Certainly, the differences which are evident in children's perceptions of alcohol advertising when compared to non-alcohol advertising suggest that alcohol advertising can be considered as analogous to a micro-domain.

At the same time, the dynamic nature of learning proposed by Siegler (1996) is supported by the findings from the longitudinal study, as is the idea that we have multiple representations often arising from multiple sources. To understand children's thinking it is clearly essential that methodologies are considered and

developed which are theory driven and, particularly for children, which complement explicit knowledge and consider different ‘ways’ of knowing.

### **Advertising influence**

Whilst *how* television influences children’s thinking is not a specific concern of this thesis, as the focus is on understanding children’s thinking, it is, nevertheless, worth suggesting that social learning theory may offer an explanation of how the influence occurs (Bandura, 1977). Certainly this would be appropriate in terms of children learning about social interaction and confidence, etc., particularly at a time when they are approaching adolescence and when family influences are being replaced by peer influences. As Van Evra (1998) suggests, “...parents, peers, and television characters all serve as models of social behavior for children ... both appropriate and inappropriate” (p.41). However, as far as television advertising is concerned it is also important to consider models of persuasion due to the advocatory nature of advertisements.

Whilst, as indicated in Chapter 4, there is no definitive explanation as to how advertising exercises its influence, Cacioppo & Petty’s (1989) Elaboration Likelihood Model is particularly suitable for understanding the route to persuasion for children and television alcohol advertising. Not only does this model include a central route for persuasion, whereby cognitive processing and reasoning are concerned for salient products but, unlike other models of attitude change, e.g. the Theory of Reasoned Action (Ajzen & Fishbein, 1980), it also recognises a peripheral route which can bring about attitude change “without requiring focused cognitive consideration” (Comstock & Scharrer, 1999, p.52). Response is to a peripheral cue in the message and Comstock & Scharrer (1999) suggest that attitude change may occur due to the “pleasing character of the advertisement” (p.52). Thus, this is particularly appropriate for understanding how television advertising persuades and for the influence on children of non-child directed advertisements, especially in view of the humorous nature of many alcohol advertisements. Whilst the peripheral route can result in a less stable attitude change than the central route, the repetitive nature of television advertising coupled with growing interest in alcohol as children mature

suggest that this model represents a valid way of describing how, over time, alcohol advertising can influence children's beliefs and expectancies of alcohol.

In view of the findings from the programme of research reported in this thesis and the speculation in this section as to how alcohol advertising exerts its influence, then one way to minimise the effects of television alcohol advertising is through advertising regulations. The current situation with regard to policy is considered in the next section.

### **Broadcast advertising regulations**

Since the research programme for this thesis began a number of changes have occurred with regard to the broadcast advertising regulations. Firstly, in 2003, responsibility for these regulations passed from the Independent Television Commission to a newly created body, Ofcom, who in turn appointed the Advertising Standards Authority (Broadcast) and the Broadcast Committee of Advertising Practice as regulators and reviewers of the Television Advertising Standards Code (BCAP, 2004). At the same time, in 2004, consultation took place with regard to broadcast alcohol advertising and new, stricter regulations were brought in as a result, with particular reference to youth appeal (Appendix J). In conjunction with reports from other institutions (Cragg, 2004; Young, 2003), the findings of some of the studies included in this thesis and the summary of past literature, the latter published on the Ofcom website (see Appendix A), were taken into consideration as part of the consultation.

Furthermore, the findings reported in this thesis refute arguments offered by those with advertising interests as part of the consultation. In their response to the proposals put forward by Ofcom, the Institute of Practitioners in Advertising (IPA, 2004) suggested that "Animation can be a very adult form of creativity, what about the Famous Grouse and Boddingtons Cow?", and "The criticized but highly creative cat on the tiles commercial for Bacardi arguably does not appeal to the young at all. It is a fairly sophisticated concept" (p.8). These claims are clearly contradicted by the findings reported in this thesis both from the interviews and the categorisation

study. In both the interview and the categorisation studies the Boddington's and the Bacardi Breezer advertisements mentioned were the two that were most popular with children.

Of importance to policymakers is the finding that alcohol advertisements appeared to be equally as popular as advertisements for non-alcohol products when television advertising regulations specifically stipulate that "advertisements for alcoholic drinks must not be likely to appeal strongly to people under 18, in particular by reflecting or being associated with youth culture." (11.8.2(a)1). The outcome of the studies reported in this thesis suggest that great care must be exercised with regard to the style of advertising used for alcohol advertisements if manufacturers and advertisers do not wish to appeal to young people. This is especially true in view of the finding that there appears to be a mere exposure effect. Whilst banning alcohol advertisements is clearly an available option, the main drawback to this is that the budgets currently spent on television advertising would be spent elsewhere on promoting the products, perhaps in areas where there is little or no regulation. It would perhaps be more sensible to ensure that regulations are strictly enforced and to introduce a watershed for alcohol advertising, e.g. screening such advertisements only after 9 pm. This would hopefully reduce the extent of alcohol advertising exposure to seven to nine year old children. Additionally, it would be helpful if the nature of the product being advertised is made clear early in the advertisement.

## **Future research**

How can this research be developed to increase even further our understanding of children's thinking about alcohol and alcohol advertising with a view, perhaps, to intervention and education? Certainly, some of the rich longitudinal data merits further investigation. For example, the ABEC scores have tracked the development of children's alcohol expectancies and beliefs over time. An in-depth analysis of these could prove valuable in investigating whether and how different areas of beliefs about alcohol (e.g. increasing social confidence) change in themselves and in importance to the children. This would provide educational benefits in that education could be tailored to children's beliefs about alcohol, rather than what

adults think they believe. Whilst for this study the measure was developed for use with children as young as 9 years old, it merits further development and adaptation in order to permit research with even younger children to gauge exactly when expectancies are starting and which factors are perceived as most important by these children. Again, this could have educational benefits.

Further analysis of two of the statements eliminated from the final ABEC scale during the reliability assessments reported in Chapter 7 may also prove beneficial. These statements related to cognitive improvement as a result of drinking alcohol. As persistent belief in this has been found in late adolescent alcohol abusers with alcohol abusing parents (Brown, Creamer et al., 1987), closer investigation of responses to these two eliminated questions would determine whether this was the case for any of the children participating in the longitudinal study. Using the data on other contextual influences, it might be possible to determine whether anything specific contributes to this effect. This could be crucial in predicting future alcohol abuse in terms of alcoholism rather than simply excessive alcohol behaviour in adolescence and early adulthood.

As already indicated, new stricter regulations on broadcast alcohol advertising have been introduced whilst this research was being undertaken. As the categorisation study was successful in determining children's responses to individual advertisements, the same computer program, updated with new alcohol advertisements, could be used at a later date to establish whether the new regulations have indeed been effective in reducing youth appeal.

Lastly, the story style paradigm would benefit from being replicated with the express purpose of avoiding the gender problems in the original study. At the same time, the inclusion of a number of different brands in the stories might help to establish differences between generic and advertising influence.



## **Final thoughts**

In summary then, the research reported in this thesis has met the aims originally set out in Chapter 1. In remedying the shortfall of research in this area it has provided a broad picture of how children below the age of 10 years respond to and think about alcohol advertisements. Investigating children's knowledge using methods which reflect current theories has shown how their ideas and beliefs develop in this domain and has demonstrated the benefits of underpinning applied research with psychological theory. In this it has successfully presented the argument for using methodologies which recognise multiple 'ways' of knowing in order to understand children's thinking and has highlighted the importance of taking into consideration knowledge that may not be verbally reportable.

The research has shown that alcohol advertisements are popular and attractive, even to children as young as 7 years old, and that particular styles of advertising are more appealing than others. It has also indicated that there may be long term effects of seeing alcohol advertisements in childhood in terms of increasing positive alcohol expectancies, predictors of later alcohol behaviour. Whilst it is likely that these expectancies would become more positive over time anyway, the studies suggest that awareness of television alcohol advertisements may increase them more. Finally, it has developed reliable and valid measures which successfully investigate implicit and pre-explicit knowledge, positive alcohol expectancies, self-esteem and advertising awareness. Such measures could be adapted for use in other studies, either applied or theoretical, or for further research in this area.

This thesis started on the premise that television is one of the many diverse sources of learning available to children. The findings of the research reported here suggest that television alcohol advertisements provide information and influence on children's thinking about alcohol. However, as cognitive variability predicts, it is just one of a number of ways in which children learn; for example, family and peers are shown to be slightly more influential, and early personal experience with alcohol also appears to increase positive alcohol expectancies. Nevertheless, there needs to be a greater awareness that advertising, and alcohol advertising in particular, can

have longer term impacts than may previously have been considered and that research needs to be approached from a theoretically driven background. Learning does not necessarily occur at a concurrent, immediate level. The findings presented in this thesis suggest that it is dynamic, ongoing and cyclical in nature.

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## **Appendix A**

**Copy of report supplied to Ofcom, the broadcast advertising regulator in August 2002, subsequently published on-line as part of a consultation on revisions to Alcohol Advertising Regulations**

**Children's responses to alcohol  
advertising on television:  
A summary of recent research**

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## **Children's responses to alcohol advertising on television:**

### **A summary of recent research**

In the present day, with accessibility to television at all hours, a wide range of alcoholic drinks and, perhaps most importantly, with far more sophisticated advertising campaigns than in the past – ones which tend to promote image (associating a lifestyle with a particular product consumption) rather than product quality - what is the present situation regarding the effects of alcohol advertising on children? Will it simply encourage later brand awareness, or will the commercials they see as children encourage them to start drinking earlier perhaps than they would have done or to drink more or more frequently than they would have done otherwise? The following report summarises recent research which has examined children's responses to televised alcohol advertising.

Specifically, the review will consider the amount of research undertaken and its sources, whether children like alcohol commercials and, if they do, what particular aspects of such advertising they find attractive, and their awareness of it on television. Research that has studied actual influence on children is covered and is followed by an assessment of issues raised by the reports to date, including methodological concerns. The report ends with suggestions for areas and methods for future research which will help to provide a more rounded picture of the effects of alcohol advertising on children.

### **Previous studies on children and alcohol advertising**

Literature searches for children and television alcohol advertising were carried out via recognised scientific databases such as PsychInfo, the Web of Science and Zetoc (British Library). These revealed only 11 studies in peer reviewed journals in the last 10 years which have included children of 12 years and below (see Appendix A for abstracts of these papers). Of these studies, ten include children of 10 years and below, five of which have 10 year olds as the youngest age group studied. The source of papers is varied: three of the eleven journals are concerned with drug

issues, three with health and two with child development and adolescence. Of the remaining three papers, one comes from a psychology journal, one from a psychopharmacology journal and one from a broadcast media journal. The table in Appendix B details peer reviewed papers in this area and also includes some of the research involving adolescents.

This review, concentrating largely on papers in the last 10 years, reveals a distinct paucity of empirical studies specifically involving children rather than adolescents and young adults. Those studies which have taken place tend to be concentrated in the USA, with other research emanating from New Zealand and South Africa.

However, for the two most recently published UK studies it is necessary to refer back as far as 1988 (Aitken, Eadie, Leather, McNeill, & et al., 1988; Aitken, Leather et al., 1988). It is, of course, possible that more studies have occurred but are retained in-house by advertisers, as is often the case in advertising research. It is also important to note that, as styles of advertising and the use of humour in commercials vary between the UK and the USA, there may be less generalisability of findings from one country to another than might initially be thought (Caillat & Mueller, 1996).

Equally, the minimum legal age for drinking differs between the USA and the UK and this should be borne in mind when considering any results reported, as personal relevance to the product advertised has been shown to increase influence (Andsager, Austin, & Pinkleton, 2001; Gorn & Florsheim, 1985; Moore & Lutz, 2000).

Fortunately, despite the lack of research, three studies in particular provide a wealth of information about children's likes and dislikes, although the youngest children taking part in any of these studies are 9 years old. Aitken, Leather et al. (1988) interviewed a total of 150 children in groups similar to focus groups; they were aged from 10 to 16 years of age. This was followed by another study where individual interviews were carried out with 433 children aged between 10 and 17 years old and included the identification of stills from television advertisements (Aitken, Eadie, Leather, McNeill, & et al., 1988). Both of these studies took place in Scotland. Far more recently, and as part of an ongoing study, Waiters et al. (2001) held focus group discussions with a total of 97 children aged 9-15 years in California. In their

groups the children were asked for their opinions and responses to 6 pre-selected television commercials for beer that they viewed.

## **Do children like alcohol advertisements?**

In general, research suggests that a lot of children as young as 10 years old like televised alcohol advertisements (Aitken, Eadie, Leather, McNeill, & et al., 1988; Aitken, Leather et al., 1988; Waiters et al., 2001; Wyllie et al., 1989; Wyllie et al., 1998). Not only do some children like them, but they are also included in their list of favourite advertisements (Aitken, Leather et al., 1988; Nash, Pine, & Messer, 2002; Wyllie et al., 1998) and children rate them more highly than other advertisements aimed at adults (Aitken, Leather et al., 1988).

Age and gender differences appear to exist in the liking of alcohol advertisements. For example, younger children, i.e. 10-12 years old, prefer humorous commercials for beer, older girls prefer stylish advertisements, or ones which contain feminine imagery and older boys were found to prefer modern or surreal advertising (Aitken, Eadie, Leather, McNeill, & et al., 1988). In the same study more boys than girls liked alcohol commercials.

Whilst it seems in general that 10 year olds like alcohol advertisements they are, nonetheless, less enthusiastic about them than 12 year olds; certainly 'liking' and including alcohol advertisements as favourites increases with age. In fact, some of the younger children disliked alcohol ads (Aitken, Leather et al., 1988).

However, several studies suggest that this dislike may be the result of some of the younger children taking a moralistic point of view and the fact that children at this age appear to have difficulty separating the advertisement from the advertised product. Whilst children may initially say that they dislike an alcohol advertisement, Aitken, Eadie et al. (1988) found that when asked specific questions about features of the commercials it was clear that the 10-12 year olds enjoyed them. Furthermore, both Waiters et al. and Aitken, Eadie et al. identified conflict in this area and provide examples of comments made by their younger participants such as "I like almost



everything about it except that it's an ad for beer" (Waiters et al., 2001), p.704) and "I like the ads, but I don't like the alcohol" (Aitken, Eadie, Leather, McNeill, & et al., 1988; Aitken, Leather et al., 1988). So it may be that disliking an alcohol advertisement is perhaps more associated with a lack of ability to separate the product and the advertisement rather than appeal simply increasing with age.

Waiters et al (2001) also discovered some more specific dislikes amongst children. Negative portrayals of women, encouragement to drink, and exploitation of others were all seen as off-putting aspects of alcohol advertising. Equally, visual displays of drinking, product-focused adverts and ones which associated alcohol with the outdoors or health, and which were often deemed 'boring', all provoked dislike. The girls in this study also disliked the association between drinking alcohol and popularity and the idea of being 'cool'.

In general children in the studies felt that alcohol advertisements were targeted at adults although there was some suggestion in the most recent study that teenagers could be attracted by them (Aitken, Leather et al., 1988; Waiters et al., 2001).

### **What features of alcohol advertising appeal to children?**

Humour in advertising appeals to children (Preston, 2000). When asked to identify favourite commercials, younger children mentioned humorous advertisements for products and items aimed at their age group, e.g. sweets and breakfast cereals (Aitken, Eadie, Leather, McNeill, & et al., 1988; Aitken, Leather et al., 1988; Nash et al., 2002). All of the groups in the Aitken, Leather et al. (1988) study considered humour an important aspect of advertising and one which often redeemed an advertisement for a boring, or adult-directed, product.

Humorous advertisements for alcoholic drinks were identified as popular with all the children in the Aitken et al (1988) study and were included as the main favourites for those of 12 years and over. It was also the humorous commercials which were generally mentioned by 10 year olds in response to cued recall for alcohol advertisements in this study.

Some thirteen years after Aitken's studies, Waiters et al. (2001) had similar findings and identified different levels of sophistication of humour according to age. As would be expected, the younger children prefer simple, physical humour whilst older children were able to appreciate more complex humour. This is in line with studies examining age-related understanding of ambiguity in advertising which is often essential to understanding or 'getting' the joke (Nippold, Cuyler, & Braunbeck Price, 1988). Again, more recently, in the Nash et al. (2002) study, the humorous Budweiser commercials – both the 'Whassup' and the chameleon campaigns - were nominated as favourites by more children aged 9 and 10 years old than any other advertisements. Moreover, unlike the Aitken study, no alcohol commercial cue was necessary to elicit this response; this would suggest that the type of humour employed in these advertisements is more appealing to younger viewers than that used fourteen years ago.

Humour can also be seen as a redeeming feature of alcohol advertisements as it appears to provide a way in which children can like a commercial without necessarily liking the product. This can be seen from the comment made by a middle school boy on his appreciation of an amusing beer commercial "I think it was because of the comedy ... because it didn't really have anything to do with beer." (Waiters et al., 2001). By distancing the advert from the product, it seems to 'allow' the viewer to enjoy the advertisement.

Music appears to attract all age groups, and brightness and colour were both cited as important ingredients for a successful advertisement by ten year olds (Aitken, Leathar et al., 1988; Waiters et al., 2001; Wyllie et al., 1989). Although some of the children were against the use of personalities to promote alcohol, humour was again seen as a redeeming feature when they were used, as in the case of Paul Hogan and the Fosters' lager advertisement, which was popular at the time of the study (Aitken, Leathar et al., 1988).

As a very recent report, the Waiters et al. (2001) study is the only one to include the appeal of animated animals such as those in the Budweiser commercial. These were very popular with all age groups, but particularly the 9-11 year old children and girls of 11-14 years. In addition to the humour involved, children appreciated the cuteness

and antics of the animations and the older children recognised the anthropomorphism. Of interest here is that, as with humour, one of the reasons for the appeal was again to distance the advertisement from the product. One of the middle school girls put it succinctly, “It didn’t say [anything] about beer and it was nice. I wasn’t looking at the sign. I was looking at the main attraction – the animals.” (p.712) Clearly however, as the ‘sign’ was noticed, the advertising message was getting across. As another female said about the animatronics “You get so used to it you don’t even need to see Budweiser, you just know it’s them” (p.713).

Today, alcohol advertisements are increasingly portraying an image rather than emphasising the qualities of the drink. By associating a product with a particular image, whether it be a stylish, sociable or similar one, and often with a humorous element, advertisers infer that by using the advertised product the viewer, too, can have a similar lifestyle or, in some way, be like the person in the commercial. In this way advertisers are changing the emphasis of the advertisement by shifting it from the qualities of the product to the qualities of the consumer and his or her lifestyle. Clearly this should be an important consideration if, as studies show, television and advertising provides a source of world knowledge for children (Judith P. Van Evra, 1995).

Overall, image advertisements for alcoholic drinks are popular with children: they are found to be liked, considered more likely to persuade and more likely to appeal to peers (Aitken, Leathar et al., 1988; Covell, 1992; Kelly & Edwards, 1998; Waiters et al., 2001; Wyllie et al., 1998). Interestingly, this contrasts with a preference for product oriented advertisements for general products such as clothing and personal care items (Covell, 1992). This may again have something to do with the fact that, as the Waiters et al. (2001) study found, children liked beer commercials that did not look like beer commercials. The use of strong imagery was even found to remove the need to show the product without losing the message, although a straightforward sports sponsorship advertisement depicting the New Zealand rugby team, whilst proving very popular, was far less successful at promoting the main message (Wyllie et al., 1989).

Whilst image ads were generally preferred, there were nevertheless some individual, age and gender differences. Perhaps one of the most noticeable differences appears to be a temporal one. Whereas Aitken, Leather et al. (1988) found that only the older children in the study appreciated and understood the more complex issues in image advertisements, there was a noticeable difference in the far more recent Waiters, Treno et al. (2001) research. In this study children appeared to be far more consumer literate: even some of the younger children (in the 9-11y group), though not all, were able to go beyond the surface features of an advertisement and were explicitly aware of the message being promoted by the advertiser. These children could identify the target audience for the advertisement and label them as 'cool', etc., and were able to make the associations between drinking beer and lifestyle, popularity and masculinity. Whether this can be attributed to better consumer education, to greater exposure to advertising or to more sophisticated and earlier maturing child consumers is open to question. Whatever the reason, Waiters et al. found evidence of children's awareness of "the implicit promise of overall psychological well-being" in a comment by an elementary school female who said "'You'll feel better about yourself if you drink Bud Light".' (p.711).

Nonetheless this was not the case for all of the youngest children in the Waiters et al study, nor for some in the 11-14 year age group. Some clearly did not understand what the advertiser was trying to convey. These children made negative comments about the drinkers suggested by the commercials and had negative thoughts and outcomes for the image alcohol advertisements, suggesting that people would "lose personal control, feel bad, or become less intelligent" (p.711). This was particularly true for female elementary school children (Waiters et al., 2001). Moreover, some children found difficulty in explaining themselves as the Wyllie, Casswell et al. (1989) study found: "The interviewers felt that answering imagery-type questions was not particularly easy for the children ... likely that those who were actually aware of the tough, active, outdoors type imagery exceeded the 45% who actually verbalized it" (p.645). This suggests that findings may differ if methods to tap such knowledge can be found.

However, older children (14-16 years) explicitly recognise the association between the product and sexual attractiveness, popularity, masculinity, etc. (Aitken, Leather et

al., 1988; Lieberman & Orlandi, 1987; Waiters et al., 2001). Indeed, one of the 14-15 year old boys in the Waiters, Treno et al (2001) study demonstrated a mature understanding of advertising intent when talking about a beer advertisement: ““A lot of people won’t be attracted to the beer but they will be to the lady, they won’t even notice the beer. It’s a two-in-one deal [for the Budweiser company]”” (p.704) This skill of two loop recursive thinking, or thinking about thinking about thinking, appears not to be available to younger children and only starts to develop in early adolescence at around the age of 12 years old. (Paget et al., 1984).

Responses to image advertisements varied by gender as well as age or maturity. Covell (1992) found that although image alcohol advertisements were preferred overall, boys of 11-13 years were more like the younger age group of 8-10 year old girls and boys in that both groups were less image oriented. This reflects perhaps earlier maturation amongst girls. Conversely, Kelly and Edwards (1998) found that it was boys who tended to prefer image advertisements, although this difference may be attributed to studying teenagers (of 13 years and older) rather than children.

Preferences were not the only gender differences, however. For example, in the Wyllie, Zhang et al. (1998) study, 46% of males perceived the alcohol commercials to be realistic compared to only 28% females. Equally in the Waiters et al. (2001) study 9-11 year old boys proposed a positive outcome for the people in the advertisements whilst the 9-11 year old girls suggested a negative outcome. This would indicate that, whilst girls prefer image style commercials they are more realistic about them and that boys may possibly be more vulnerable to them.

## **Do children remember alcohol commercials, and what do they remember?**

Clearly, advertisers would like consumers to remember particular brands if, as they claim, advertising is used to promote brand loyalty or change. What about children, do they remember advertisements, even if the commercials are not targeted at them? Here it is important to distinguish between recognition and recall as they draw on

either implicit or explicit knowledge respectively. In children, it is important to access their implicit knowledge, as it has been shown that children frequently hold knowledge which is not consciously available to them and which they may be unable to verbalise (Karmiloff Smith, 1992; Pine & Messer, 1999).

Recognition measures involve children reporting whether or not they have previously seen a specific advertisement and, in general, recognition of alcohol advertisements is quite good. Around 50-60% of 10-12 year old children were able to recognise a half to two-thirds of the stills taken from television commercials shown to them (Aitken, Eadie, Leather, McNeill, & et al., 1988; Wyllie et al., 1998), and 84% demonstrated recognition from a verbal description (Wyllie et al., 1989).

Nevertheless, recognition for other adult-directed advertising was found to be better in the Nash et al. (2002) study. Whilst 48% of 9-10 year old children recognised three or more alcohol advertisements, 82% of the children were able to recognise the same number of non-alcohol television commercials.

Identification of brand names, or explicit recall is, as expected, lower. In the Wyllie, et al. (1998) study, half of the children who recognised the advertisement were able to name the beer although Aitken, Eadie et al. (1988) found that the majority of children could name at least four of the commercials. Even in free recall, 10 year old children have been found to have good recall of alcohol advertisements when asked to name as many they can remember; the difference between these children and older ones is that they require a prompt or cue to alcohol advertising in order to do so (Aitken, Leather et al., 1988). One thing that emerged from the Wyllie et al. (1989) report is that although recognition and recall for alcohol commercials were good, even in 9 and 10 year olds, both abilities nevertheless improved as a function of age.

The ability to recognise that an advertisement was for alcohol, even when unable to name the product, also increased with age, e.g. 67% of 10 year olds who had seen the advertisement and 88% of 14 year olds in the Wyllie et al. (1989) study. Of interest in the Wyllie et al. (1998) study is that, despite no beer being included in either of the two advertisements shown to them, 82% were able to say that the advertisement was for alcohol or beer even if, again, they were unable to name the brand. A similar, though not quite as substantial, effect was found in the Nash et al.

(2002) study where 52% of those who recognised the advertisement identified them as alcohol commercials. As with the Wyllie et al. (1998) study, the stills chosen for this research avoided showing the product. This suggests that implicit knowledge of particular types or styles of advertising are being associated with the product.

There even appear to be differences in recall and recognition of alcohol commercials by gender. For example, in the Aitken, Eadie et al. (1988) study, boys were found to recognise and recall more alcohol commercials. These findings contrast with other studies where, in general, girls have been found to have better knowledge of non-alcohol television commercials (e.g. (Edens & McCormick, 2000; Nash et al., 2002). Whilst it may be that alcohol advertisements are more memorable to boys, it may also be due to the nature of the advertisements used in the Aitken et al. study, which were largely beer advertisements, as equal numbers of girls and boys recognised the Malibu commercial.

So if children are aware of alcohol advertisements, recognising and identifying them, are they learning from them? Certainly Grube & Wallack (1994) found that children's knowledge of brands and slogans was related to their awareness of alcohol advertising and that better awareness resulted from increased television viewing. As television commercials present only a positive view of alcohol then this would suggest that those who watch more commercial television when young should have more positive expectations of alcohol. Clearly, however, it is important to note that such expectations may be tempered by other viewing, i.e. television programmes that portray drinking.

Equally, Austin and Nach Ferguson (1995) found that brand knowledge outweighed general knowledge about alcohol, and suggested that children are gaining a lot of their information about alcohol from advertising. This was confirmed by 54% of 10-13 year old males and 39% 10-13 year old females in the Wyllie, Zhang et al. (1998) study who indicated that they get information about alcohol from advertising, although this information gathering decreased as a function of age. However, the direction of causality in these relationships has yet to be identified as it may not be a causal relationship.

## Are children influenced by televised alcohol advertisements?

Surely the most important part of research into alcohol advertising and children, and probably one of the most difficult to assess given their age, is the actual influence that advertising plays in promoting drinking, *per se*, to children, albeit for use at a later date. In general, research up to early the 1990s had very inconclusive and mixed findings and there have been very few studies on the effects of televised alcohol advertising on children.

Strickland's (1982) study of teenagers and Adlaf & Kohn's (1989) reassessment of the Strickland data both found little evidence of the positive direct influence of alcohol advertising on behaviour. More recently both Lipsitz, Brake et al. (1993) and Austin & Nach Ferguson (1995), in both cases in studies with younger children (10 years and 7 years respectively), also suggested that there was little effect of alcohol advertising, although brand specific knowledge was found to predict drinking. However in both these studies the validity of some of the measures was questioned by the authors.

More generally in the 1990s the influence of television alcohol advertising on alcohol behaviour has tended to find a more positive relationship between advertising and alcohol behaviour, although direction of causality continues to be a problem. Even children tend to believe that alcohol advertising encourages drinking and this is especially true for image based advertisements (Lieberman & Orlandi, 1987; Wyllie et al., 1989; Wyllie et al., 1998). Liking alcohol advertisements, in conjunction with parent, peer and age variables, was found to predict 35% variance for drinking at 20 years old (Wyllie et al., 1998); and Grube & Wallack (1994) found that an awareness of advertisements led to more positive beliefs about alcohol and, in turn, to intention to drink as an adult. Similar findings have resulted from research into tobacco advertising (Aitken, Eadie, Hastings, & Haywood, 1991).

Austin & Meili (1994) found that intentions to drink could be related to a desire to be like the person on the television who is drinking. Again, research into tobacco advertising with children has uncovered similar, though not identical, findings in that



a favourable comparison of self-image with a smoker stereotype on television was more likely to result in smoking as an adolescent (Aloise Young, Hennigan, & Graham, 1996). Equally, the age of the actor in a commercial appears to be important, particularly for those in their early teens, with a positive relationship between alcohol use and those who perceived the actor in an alcohol advertisement to be under age for drinking (Slater et al., 1996).

Perhaps one of the most interesting studies showing the positive effects of alcohol advertising on a sample of 551 children as young as 9 is that by Dunn & Yniguez (1999). In this study exposure to beer commercials as opposed to soda commercials (control group) meant that 4<sup>th</sup> graders were more likely to activate positive and arousing expectancies and that these expectancies would be more like those of 5<sup>th</sup> graders than those in the control group. As a result Dunn et al. suggest that, “exposure to advertising may accelerate the developmental process of shifting toward the activation of positive and arousing expectancies and away from the activation of negative and sedating expectancies” (p.480).

These studies suggest that even with more sophisticated, consumer literate children – ones who are aware of the advertising message as an exhortation to buy the product and profit the company (Waiters et al., 2001) – there is still a need to research further: a knowledge of the purpose of advertising is clearly not enough to reduce influence. Moreover, Linn, Delucchi & de Benedictis (1984) highlighted the discrepancy between consumer knowledge and advertising cynicism in teenagers with the teenagers’ actual behaviour, finding that original criteria set by the individual was disregarded in the face of advertisers’ promotional criteria.

### **Issues arising from research to date**

Studies of the effects of alcohol advertising frequently rely on survey instruments and correlational data. However, as with many such studies, whether finding a positive or negative relationship between television alcohol advertising and drinking behaviour, it is difficult to attribute directional causality, i.e. did an interest in alcohol

stimulate the interest in alcohol advertisements or vice versa. Indeed, this is acknowledged by several researchers in the field who have called for prospective or longitudinal studies on children and alcohol advertising, although to date this has not occurred (Aitken, Leather et al., 1988; Dunn & Yniguez, 1999; Grube & Wallack, 1994; Lieberman & Orlandi, 1987). Nevertheless, two longitudinal studies have considered the more general role of television on alcohol behaviour and children (Anderson et al., 2001; Robinson et al., 1998) whilst a third researched the effects of alcohol advertising on teenagers (Connolly et al., 1994).

Leaving aside the problem of causality, conventional survey instruments, as used in many of the experiments cited in this report, use measures which tap only explicit knowledge. A few have made some attempt to tap implicit knowledge, (Austin & Johnson, 1997b; Covell, 1992; Dunn & Yniguez, 1999; Waiters et al., 2001) although some of the measures used suggest more validity than others. For example, whilst Austin et al. (1997) made an admirable attempt at detecting influence on behaviour, asking children to choose between toy can of either an alcoholic or soft drink may not have the best external validity. It is therefore important to develop and use reliable and valid measures which access non-verbalisable knowledge in order to provide a more complete picture of children's responses to alcohol advertising on television. The use of research measures which tap both children's implicit and explicit knowledge of alcohol advertising would assist in gathering more accurate information about 10 year olds' awareness and preference for alcohol advertisements and in ascertaining whether liking and awareness really do increase solely as a function of age or whether there is already underlying knowledge and what that knowledge is. Hopefully, it would also help to overcome difficulties in responding to questions about image advertisements and would be more applicable for use with even younger children. In this respect it would be valuable in discovering whether children below the age of 10 are aware of alcohol advertising, whether it is influential at this age and, if necessary, inform decisions on intervention techniques and at what age to introduce prevention programmes.

One of the criticisms of many of the alcohol studies to date is that they tend to concentrate on beer advertising which children, and adults alike, perceive as being male oriented (Wyllie et al., 1989). In fact, such was the difference in both

consumption and recall of advertising in the Connolly, Casswell, Zhang & Silva (1994) study that analysis of data was separated by both gender and type of alcohol. In their study, for example, 68% males compared to 20% females reported that three-quarters of their alcohol consumption was beer; likewise beer ads comprised 75% of the total advertising recalled by males at 15 years old compared to 39% for females. Of a total of 18 studies in the past ten years researching the effects of alcohol on children of school age (8 to 18 years old) eight of these used only beer advertisements. So, whilst gender differences appear throughout the literature the effect may be artefactual. It may be that alcohol advertisements are even more popular than the studies suggest, especially in view of a recent rise in targeting females with such products as Bacardi Breezer, Archers, Reef, etc. Ideally future studies should include advertising for these types of drink.

Finally, one of the recurring issues from the review is that of children liking alcohol advertisements but not liking alcohol. For example, the youngest children, taking a moralistic approach, would sometimes claim to dislike an advertisement because they did not like the product and yet further probing found that the advertisement itself was liked. Children aged 9 to 11 seemed to find it difficult to separate the commercial from the product. Next came children who declared that they liked the commercial, but not the product, and then children, even some of the older ones, who liked specific types of advertisements – i.e. image oriented commercials or ones containing humour or animatronics, - for the very reason that the particular feature distanced the advertisement from the product, alcohol. It seems that even some of the older children prefer not to see the alcohol.

## **Summary and conclusions**

Although there has been a distinct lack of studies looking at the effects of alcohol advertising on children below the age of 12 years old, certain key findings emerge:

- ◆ children aged 10-12, like alcohol advertisements but not necessarily the alcohol
- ◆ children find specific aspects of TV alcohol advertising appealing, namely:

- humour
- music
- bright colours
- animated characters and animals
- image ads rather than product quality ads
- ◆ gender differences appear to exist but may be artefactual
- ◆ generic alcohol advertisement knowledge is better than brand awareness
- ◆ children find the advertisements easily recognisable as alcohol commercials
- ◆ positive influence may be related to:
  - liking alcohol advertisements
  - the actor in the advert,
  - the age of the actor in the commercial
  - mere exposure to advertising
- ◆ there is a lack of time order evidence
- ◆ developmental issues need to be considered, e.g. measures to tap implicit knowledge are required for children
- ◆ studies examining all type of alcohol, and not just beer, are needed

So it seems that, despite not being targeted at them, some children in the 10-12 year age group find television alcohol commercials attractive, that certain styles of advertising are more attractive than others and that there are gender differences in responses to such commercials. However, the research also suggests that there may be more information available which is difficult to access via explicit methods. Moreover, very little is known about the response to alcohol advertising by children younger than this – are they, too, being attracted to the advertisements, do they understand what is being advertised, etc?

Future research should concentrate on such shortfalls, including remedying the lack of research, particularly in the UK. For example, a prospective study would provide valuable information as suggested by several researchers, as would complementary studies which access both implicit and explicit knowledge in children from the ages of 7 to 12 and which explore alcoholic drinks in general, not solely beer. These would help to define whether there really are gender differences and age differences in responses to alcohol advertising. Equally, studying younger children, i.e. below

10 years, should help to identify at what age children become attracted to alcohol commercials. Taken together the studies would provide a rounded view of the effect of television alcohol advertising on children.

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## **Appendix B**

**Descriptions of advertisements used in the interview and  
categorisation studies (Chapters 2 and 3 respectively)**

## Appendix B: Advertisements used in interview and categorisation studies (Chapters 2 and 3)

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### Product name    Type of product    Advertisement description

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#### Alcohol

Archer's	Schnapps	Girl in bikini passes a line of men. The men are wearing swimming shorts and drinking beer. As she passes they pull their stomachs in. She orders a drink and stands at the bar drinking it and watching them. She takes her time drinking to delay her return, in the knowledge that they are holding their breath and stomachs in. As she eventually passes them they breathe out, let their stomachs distend again and sigh with relief. She smiles, aware of what has happened.
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Presentation of product: 11<sup>th</sup> second of a 30 second advertisement (beer shown at 6 sec)

Bell's	Whisky	Man (Jools Holland) introduces various sections of jazz orchestra as they start to play, then joins them, playing the piano. He goes on to discuss the 'blend' referring to the instruments and to the blend of whiskies in the product. Setting is in a club/disco with people dancing and the band playing.
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Presentation of product: 11<sup>th</sup> second of a 30 second advertisement

Boddington's	Beer	A cartoon portraying a 'cow' with a deep voice and udders with a pint of beer in one 'hand'. Cow is drinking under water and defeats an attack by a shark to take his pint of beer away. At one point it appears as though the shark has bitten off the cow's arm, but suddenly the cow pulls his arm out from behind him to reveal that he's still got the arm and he's holding a pint. He then 'boxes' a small fish away from his beer.
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Presentation of product: From the beginning of a 20 second advertisement

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<b>Product name</b>	<b>Type of product</b>	<b>Advertisement description</b>
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Bacardi Breezer	Rum mixed drink	An elderly lady is sitting on a sofa knitting. A cat is sat on the back of the sofa; on the cat's collar is a bottle top like an identification disc, it bears the Bacardi Breezer logo. A television is on in the room showing a football match. When a goal is scored the cat leaps on to the floor and starts dancing on two legs. Disco style music playing in the background.
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Presentation of product: No product appears on screen. Only bottle tops bearing logo are displayed. One at 2 seconds, five at 8 seconds in a 10 second advertisement

Budweiser	Lager/beer	An empty glass is filled on screen in close up. Music playing in the background Condensation on the glass suggests that it is chilled and close ups concentrate on the liquid going into the glass, coming out of the bottle and the name. Ends with a shot of the neck of the bottle with an upturned bottle top on top of the bottle like a crown. On screen "King of Beers".
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Presentation of product: From the beginning of a 30 second advertisement

Guinness	Beer	Scene from a game of hurling. Man needs to score a goal. He looks down and sees a ton weight instead of the puck, he looks up and the opponents standing in front of the goal are transformed from people to 'beasts' with pig-like faces and huge shields. Nevertheless he hits the puck and scores the final winning goal. Final scene is in the pub with him being carried victoriously into the pub by his team mates and the barman serving a pint of Guinness.
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Presentation of product: 20<sup>th</sup> second of a 30 second advertisement

John Smith's	Beer	Scene from a diving contest. Competitors take their place on the diving board and perform standard dives. They are given points by judges at one side of the pool. Then John Smith comes on to the diving board. JS looks quite different to other, very fit looking, divers.
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<b>Product name</b>	<b>Type of product</b>	<b>Advertisement description</b>
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Instead of performing a standard dive, John Smith brings his knees up to his chest and jumps in creating a huge splash which goes all over the judges. As he climbs out of the pool, his shorts start to pull down.

Presentation of product: 37<sup>th</sup> second of a 40 second advertisement

Smirnoff Black  
Ice

Vodka mixed drink

A man on an aeroplane is approached by the stewardess who informs him that he is sitting in the first class compartment. He replies that he's got an economy ticket but thought he would 'get away' with sitting in first class. The stewardess apologises to him and moves on. He smiles as he returns to his book. Logo appears on screen.

Presentation of product: 17<sup>th</sup> second of a 20 second advertisement

**Non-alcohol**

Baxter's  
Soup

Starts with a whole tomato which is sliced in half. One half transforms into a bowl of tomato soup. Voice over emphasises only the finest ingredients used and talks about the product being their freshest soup ever.

Presentation of product: 12<sup>th</sup> second of a 19 second advertisement

Diet Coke

Diet fizzy drink

Restaurant setting with a man and woman sitting at a table. The woman is drinking Diet Coke at the beginning of the advertisement. When the man asks if he can call her, the woman writes telephone numbers she can be contacted on all over the paper tablecloth and tears part of it off.

Presentation of product: From the beginning of a 30 second advertisement

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**Product name    Type of product    Advertisement description**

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Ferrero Rocher    Chocolates    Dinner party. Lady goes out to kitchen to fetch chocolates and has a fight with her twin sister/ alter ego over them as the 'twin' does not want the guests to have the chocolates. She wants to keep them for herself. They pull backwards and forwards on the box until the generous twin wins them and takes them out to her guests.

Presentation of product: 4<sup>th</sup> second of a 29 second advertisement

Kaliber    Non-alcohol beer    Hospital setting: at patient's bedside, a surgeon introduces himself and his colleague. Tells the patient that he will be performing the operation and not to worry. As he is saying this he produces what looks like a beer bottle from his pocket and starts drinking from it. The patient, the nurse and the colleague all look very concerned, but none of them question his behaviour. Advertisement ends with a voiceover saying "With Kaliber, only the the beer gets drunk" as a bottle of Kaliber is presented on screen.

Presentation of product: 14<sup>th</sup> second (starts to drink), 27<sup>th</sup> second product is identified in a 30 second advertisement.

Lucozade    Energy drink    Spoof of Tomb Raider action adventure. Female character in combat outfit chases through subways, wrestles a 'gorilla', runs across tables in a restaurant, etc. Ends up on a bus drinking Lucozade and hiding.

Presentation of product: 9<sup>th</sup> second of 30 second advertisement.

Munchbites    Biscuits    On a date, man presents new girlfriend with bottle of wine. While she goes off to open it, he finds bag of Munchbites and an 'action man' type doll. She comes back to find him eating the Munchbites and talking to the doll.

Presentation of product: 7<sup>th</sup> second of 30 second advertisement.

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**Product name    Type of product    Advertisement description**

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Nutrigrain                    Cereal bar                    Bars of Nutrigrain appear briefly at the beginning of the advertisement splashing through a 'ribbon' of milk. This is followed by fruit and grain,(e.g. ears of wheat) colliding in mid-air to the sound of lively classical music and a voiceover emphasising the quality of the product and, particularly, the goodness it provides.

Presentation of product: 2<sup>nd</sup> second of 30 second advertisement

Red Bull                    Energy drink                    Very simple cartoon presentation: Football coach admonishing his team. When a team member complains they have no wingers the coach gives them all a can of Red Bull because "Red Bull gives you wings".

Presentation of product:24<sup>th</sup> second of 30 second advertisement

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## **Appendix C**

**Table showing significant differences in Positive Attitude to  
Advertisement scores by product**

Appendix C: Post-hoc comparisons (paired t-tests) of individual advertisement PATTAD scores

	Bacardi	Breezer	Boddington's	John Smith's	Red Bull	Ferrero	Rocher	Munchbites	Lucozade	Archer's	Diet Coke	Bell's	Guinness	Kaliber	Smirnoff Ice	Nutrigrain	Budweiser	Baxter's	
Bacardi			n.s.	*	**	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Breezer																			
Boddington's	n.s.			n.s.	**	***	***	***	***	***	***	***	***	***	***	***	***	***	***
John Smith's	*	n.s.		n.s.	n.s.	n.s.	n.s.	**	***	***	***	***	***	***	***	***	***	***	***
Red Bull	**	n.s.		***	n.s.	n.s.	n.s.	n.s.	***	***	***	***	***	***	***	***	***	***	***
Ferrero	***	***		***	n.s.			n.s.	**	***	***	***	***	***	***	***	***	***	***
Rocher	***	***		***	***	n.s.	n.s.	n.s.	**	*	**	**	**	**	**	**	**	**	**
Munchbites	***	***		***	***	n.s.		*	n.s.	n.s.	n.s.	*	*	*	*	*	*	*	*
Lucozade	***	***		***	***	*	*	*	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Archer's	***	***		***	***	***	***	***	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Diet Coke	***	***		***	***	***	***	***	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Bell's	***	***		***	***	***	***	***	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Guinness	***	***		***	***	***	***	***	*	*	*	*	*	*	*	*	*	*	*
Kaliber	***	***		***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Smirnoff Ice	***	***		***	***	***	***	***	***	***	***	***	***	***	***	n.s.	n.s.	n.s.	n.s.
Nutrigrain	***	***		***	***	***	***	***	***	***	***	***	***	***	n.s.	n.s.	n.s.	n.s.	n.s.
Budweiser	***	***		***	***	***	***	***	***	***	***	***	***	***	*	n.s.	n.s.	n.s.	n.s.
Baxter's	***	***		***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

\* <.05  
 \*\* <.01  
 \*\*\* <.001



## **Appendix D**

**Short story used in story style paradigm  
(Chapter 4)**

This is the beginning of a story. It's a story about two friends who live next door to each other.

Ben was helping his friend, Jane, to decorate the hall in her flat. He put down his paintbrush and said, "Come on, let's have a break. It's time for lunch, I think." Jane put down her paintbrush and followed him into the kitchen.

I'll make sandwiches ... said Ben.

"And I'll get us some drinks," added Jane.

Ben made them each a sandwich, whilst Jane went to the fridge and took out a can of Carlsberg for Ben and a Bacardi Breezer for herself.

Then they took their food and their drinks out into the garden to have their lunch in the sun. They ate quickly so that they could get back to the decorating and finish it that afternoon.

But when they went back indoors to get painting again, Jane screamed as a small black and purple figure shot past her. She followed the figure into the kitchen and there, drinking milk from a bowl was her black cat, Tommy. Only he wasn't black all over - he now had a big purple stripe down one side where he'd brushed against the wall.

## **Appendix E**

### **Questionnaire for story style paradigm (Chapter 4)**

First name ..... Date of your birthday ..... Class....  
 Ben is 25 years old. What do YOU think he is like?

1. How cool is Ben?

☺	☺	☺	☺	☺
not at all	a bit	cool	very cool	

2. How many friends does Ben have?

☺	☺	☺	☺	☺
not many	a few	quite a few	lots	

3. Is Ben fun to be with?

☺	☺	☺	☺	☺
not really	a bit	fun	good fun	

4. How clever is Ben?

☺	☺	☺	☺
---	---	---	---

clever	not very	a bit	clever	very
--------	----------	-------	--------	------

5. How much does Ben like going to parties and pubs?

☺	☺	☺	☺	☺
not at all	a bit	quite a lot	a lot	

6. Do women think Ben is cool?

☺	☺	☺	☺
not really	a bit	cool	very cool

7. How brave is Ben?

☺	☺	☺	☺
not at all	a bit	brave	very

8. How many times a week do you think that Ben drinks the drink he has in the story?

1	2	3	4	5	6	7
more than 7 times						

Jane is 25 years old. What do YOU think she is like?

1. How cool is Jane?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not at all	a bit	cool	very cool				

2. How many friends does Jane have?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not many	a few	quite a few	lots				

3. Is Jane fun to be with?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not really	a bit	fun	good fun				

4. How clever is Jane?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not very	a bit	clever	very clever				

5. How much does Jane like going to parties and pubs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not at all	a bit	quite a lot	a lot				

6. Do men think Jane is cool?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not really	a bit	cool	very cool				

7. How brave is Jane?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not at all	a bit	brave	very brave				

8. How many times a week do you think that Jane drinks the drink she has in the story?	1	2	3	4	5	6	7	more than 7
times								
😊😊😊 Thank you for your help. 😊😊😊								

## **Appendix F**

### **The Children's Alcohol Inventory**

First Name: .....

Date of birth: .....

### Alcohol

We are asking you to fill in this questionnaire because we are interested in what children think about alcoholic drinks (beer, lager, wine, whisky, sherry, etc.). We'd like to know your opinions and ideas – this is NOT a test. All the information you give will remain confidential and anonymous. That means that no one else will be told what answers you've given.

**Section A:** Think about the times when you have seen people drinking alcoholic drinks, perhaps in real life, on television or in films.

On the following pages you'll see some ideas about alcohol. You'll also read about things that might or might not happen when people drink alcoholic drinks. Read each sentence carefully and think about whether YOU believe it's right or not. Then put a tick in the box that shows how much believe it's right or wrong.

You can only choose one box for each sentence. If you make a mistake, don't worry, just cross through the tick and put a new tick in the box that you think is the best description.

	<b>No, that's wrong</b>	<b>That's probably wrong</b>	<b>That's probably right</b>	<b>Yes, that's right</b>
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Most people become happy when they drink alcohol.			
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People drink alcohol to help them relax.			
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People are funnier when they drink alcohol.			
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People find it easier to talk about feelings when they drink alcohol.			
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People forget to do things when they drink alcohol.			
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People worry less when they drink alcohol.			
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People who have been drinking feel like they can boss other people around.			
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People find it easier to talk to someone they are attracted to when they drink alcohol.			
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People come up with bright ideas when they have been drinking alcohol.			
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People are more relaxed when they have been drinking alcohol			
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People become loud and noisy when they have been drinking alcohol.			
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People join in with others and have more fun when they have been drinking alcohol.			



	<b>No, that's wrong</b>	<b>That's probably wrong</b>	<b>That's probably right</b>	<b>Yes, that's right</b>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People do silly or stupid things when they have been drinking alcohol.			
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People find it easier to talk to other people when they have been drinking alcohol			
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People are more brave and daring when they have been drinking alcohol.			
16.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People feel more romantic when they have been drinking alcohol.			
17.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Adult parties become more fun when there are alcoholic drinks there.			
18.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Drinking alcohol makes people feel more interesting.			
19.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People feel more alert (awake and clearheaded) after drinking alcohol.			
20.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People think alcoholic drinks taste good.			
21.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	People get on better with others when they have been drinking alcohol.			

## Section B: The next questions are about you and your experiences

1. Have you ever tasted an alcoholic drink? Read **all** the sentences below and tick the box that best describes your experience.

I have never tried a drink  → go to *question 2 (next page)*

I have had a sip  → go to *question 2 (next page)*

I have had more than one sip but not a whole drink  → go to *question 2 (next page)*

I have had a proper alcoholic drink, a whole drink, not just a sip  → go to *question 1a below* →

1a. **ONLY IF YOU TICKED THE 'whole drink' BOX** please answer the following questions:

What drink was it? .....

Approximately how long ago did you have the drink?

about a week ago       about 1 month ago       more than 1 month ago

What sort of occasion was it? (for example, a birthday, New Year, party, etc.) .....

Were you with: Family       Friends       Family and Friends       Other

2. Now think about the future, when you're an adult of about 20 yrs old. Tick the box that best describes how often you think you will probably drink alcohol then?

Almost every day

At least once every few days

Once a week

Once or twice a month

Once or twice a year

Not at all

**Very  
unhappy**      **Unhappy  
(not OK)**      **Happy  
(OK)**      **Very  
happy**

3. How do you think your parents would feel about you drinking an alcoholic drink at the age you are now?

4. How do you think your parents would feel about you drinking an alcoholic drink when you are 20 years old

5. How do you think your friends would feel about you drinking an alcoholic drink at the age you are now

6. How do you think your friends would feel about you drinking an alcoholic drink when you're 20 years old

7. Now, think about the adult in your home who drinks an alcoholic drink most often. Please choose one of the following list that best describes how often you think that he or she probably drinks alcohol.

Almost every day

At least once every few days

Once a week

Once or twice a month

Once or twice a year

Not at all

8. How often do you think that your closest friend has had an alcoholic drink in the last year?

Probably not at all

Probably he/she may have had a sip or sips, but not a whole drink

Probably once or twice in the last year

Probably once or twice a month

Probably once a week

Probably at least once every few days

9. Have you ever seen television adverts which tell people not to drink too much alcohol?

Yes  No  Not sure

10. Have you ever seen television adverts which tell people not to drink alcohol and drive?

Yes  No  Not sure

Please check that you have answered all the questions that you can.

Thank you for your help. 😊

## **Appendix G**

### **TV Viewing Habits Questionnaire**

First name (only):.....

Date of birth: .....

## TELEVISION

This questionnaire is all about what you like watching on the television. The questionnaire is asking about you and your television viewing so there are no right or wrong answers - it is NOT a test. All the information you give will remain confidential and anonymous – that means that no one else will be told what answers you have given.

1. Are you a boy?  or a girl?
2. Do you watch children's television? Yes  No
3. Do you watch television in the evening, after the children's programmes have finished?  
Yes  No
4. How often do you watch television in the **evening** during the week, **Monday to Friday**? (just tick the ONE box that best describes how often you watch)  
Never  Just sometimes  A lot of evenings  Every evening
5. What about at the weekend, do you watch television on a **Saturday afternoon**?  
Never  Just sometimes  A lot of Saturdays  Every Saturday
6. What about **Saturday evening**, do you watch then?  
Never  Just sometimes  A lot of Saturdays  Every Saturday
7. Do you watch television on a **Sunday afternoon**?  
Never  Just sometimes  A lot of Sundays  Every Sunday
8. Do you watch television on a **Sunday evening**?  
Never  Just sometimes  A lot of Sundays  Every Sunday

9. What's your favourite television programme that isn't a children's TV programme - the one you like watching the best?

.....

10. Think about when you watch television in the evenings. Does an adult (for example, Mum, Dad or a grandparent) watch television with you in the evening?

Not usually

Not very often

Most of the time

Always or nearly always

11. About what time do you usually go to bed during the week, when you've got to go school the next day?

- Before 7.00 p.m.  (1)      7.00  (2)      7.30  (3)      8.00  (4)  
8.30  (5)  
9.00  (6)      9.30  (7)      10.00  (8)      After 10.00 p.m.  (9)

12. What about at weekends, what time do you usually go to bed on a Friday or a Saturday?

- Before 7.00 p.m.  (1)      7.00  (2)      7.30  (3)      8.00  (4)  
8.30  (5)  
9.00  (6)      9.30  (7)      10.00  (8)      After 10.00 p.m.  (9)



13. Do you ever watch the following programmes when they are on TV. Tick the box that is the best description of how often you watch each programme (1 tick per programme):

	<b>Never</b>	<b>Just sometimes</b>	<b>Quite often</b>	<b>Always or nearly always</b>
Stars in their eyes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Who Wants to be a Millionaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Bill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Love on a Saturday Night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scrapheap Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coronation Street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emmerdale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eastenders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Euro 2004	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On the Ball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Goal Rush (results)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. There are some television channels which only have sports programmes on them, for example all the Sky Sports channels, British Eurosport, etc. Do you watch **any sports channels?**

Never  (0)    Sometimes  (1)    Quite a lot  (2)    A lot  (3)

15. Look at the names of some television channels below. Don't worry if you don't have all of these channels at home, it isn't important. If there is one TV channel that you like watching more than any other please tick the box next to it. If you don't mind which channel you watch, then tick the "Don't mind" box.

- BBC1  (1)    BBC2  (2)    ITV  (3)    C4  (4)    C5  (5)
- (8) Sky 1  (6)    Skysports channels  (7)    Something different to these
- Don't mind  (9)

16. What do you do when the adverts come on between TV programmes. Tick the best description of what you do.

I often sit and watch the adverts  (1)

I don't usually bother to watch the adverts  (2)

17. Which advert do you like watching the most?

.....  
.....

18. If you could choose between the two things below, which would you prefer to do?

Watch TV                       or                      Do homework

19. If you could choose between the two things below, which would you prefer to do?

Play with a friend                       or                      Watch TV

20. If you could choose between the two things below, which would you prefer to do?

Watch TV                       or                      Play a computer type game   
(e.g. Nintendo, Gameboy, Playstation or PC)

21. If you could choose between the two things below, which would you prefer to do?

Take part in a sport                       or                      Watch TV

22. If you could choose between the two things below, which would you prefer to do?

Watch TV                       or                      Surf the internet / go on the world wide web

Please check that you have answered all the questions that you can.  
Thank you for your help. ☺

## **Appendix H**

### **IAM Questionnaire**

First name: .....

Date of birth: .....

## MYSELF

This questionnaire is all about you and how you see yourself. There are no right or wrong answers to the questions. Just answer what you think is right for YOU. It is NOT a test. You will need to tick **one** of the faces in each column to show which statement is most like you and how much it is like you. Listen to the instructions you are given and see the example below.

All the information you give will remain confidential and anonymous - that means that no one else will be told what answers you've given.

### Example

I like playing computer games a lot

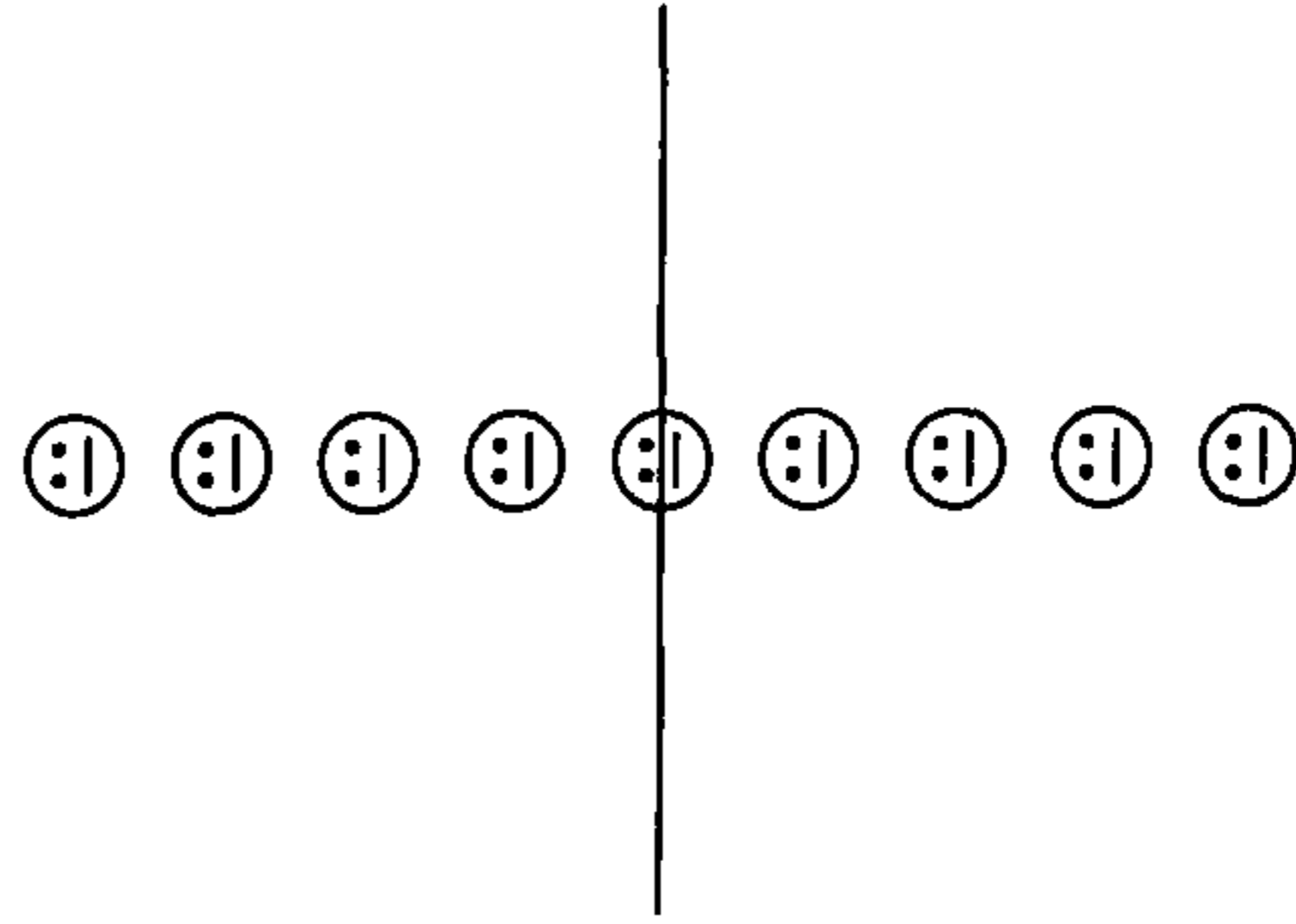
Like very much

Like

Neither like  
Nor dislike

Dislike

Don't like at all



I don't like playing computer games at all

Please make sure that you tick only **one** box in each column or row

<p><b>I almost always get my homework right</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I am good at most sports</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>Other children like me a lot</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I get on well with my parents</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>
<p><b>I usually get my homework wrong</b></p>	<p><b>I am poor at most sports</b></p>	<p><b>Other children don't like me very much</b></p>	<p><b>I don't get on well with my parents</b></p>

<p><b>I am clever</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I learn new sports and games quickly</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I have many friends</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>My parents often do nice things with me.</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>
<p><b>I am not clever</b></p>	<p><b>I am slow at learning new sports and games</b></p>	<p><b>I don't have a lot of friends</b></p>	<p><b>My parents rarely do nice things with me</b></p>

**I am very good  
at Maths**



**I am very  
happy with my  
weight and  
height**



**I make new  
friends quickly**



**If I have a  
problem I can  
always ask my  
parents**



**I am very bad  
at maths**

**I am not very  
happy with my  
weight and  
height**

**I find it  
difficult to  
make new  
friends**

**If I have a  
problem I  
cannot ask my  
parents**

<p><b>I am very good at English</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I am very happy with the way I look</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>I am very popular with other children</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>	<p><b>My parents talk to me a lot</b></p> <p>☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️</p>
<p><b>I am very bad at English</b></p>	<p><b>I am not very happy with the way I look</b></p>	<p><b>I am not very popular with other children</b></p>	<p><b>My parents don't talk to me very much</b></p>

Please look back through the questionnaire to check that you have answered all the questions you can answer.  
 Thank you for completing this questionnaire ☺️



## **Appendix I**

### **TV Advertisement Awareness Questionnaire (example used on one data collection)**

Here is an example to show you what we mean.

## Television Advertising

On the following pages are pictures taken from TV advertisements for different products.

Have seen any of these advertisements? Below the pictures are two boxes, if you think you have seen the advert, then tick the "Yes" box. If you don't think you have seen the advert, then tick the "No" box.

If you know what type of product it is advertising (for example, tea bags, a doll or washing up liquid), then write this down where it says "Type of product".

If you have seen the advert and can remember the name of the product it is advertising (for example, PG Tips) then write the name where it says "Name of product".

Do not worry about your spelling or if you cannot answer a question, this is NOT a test.

First name: .....

Date of birth: .....



Have you seen this advert? Yes

No

Type of product .....

Name of product.....

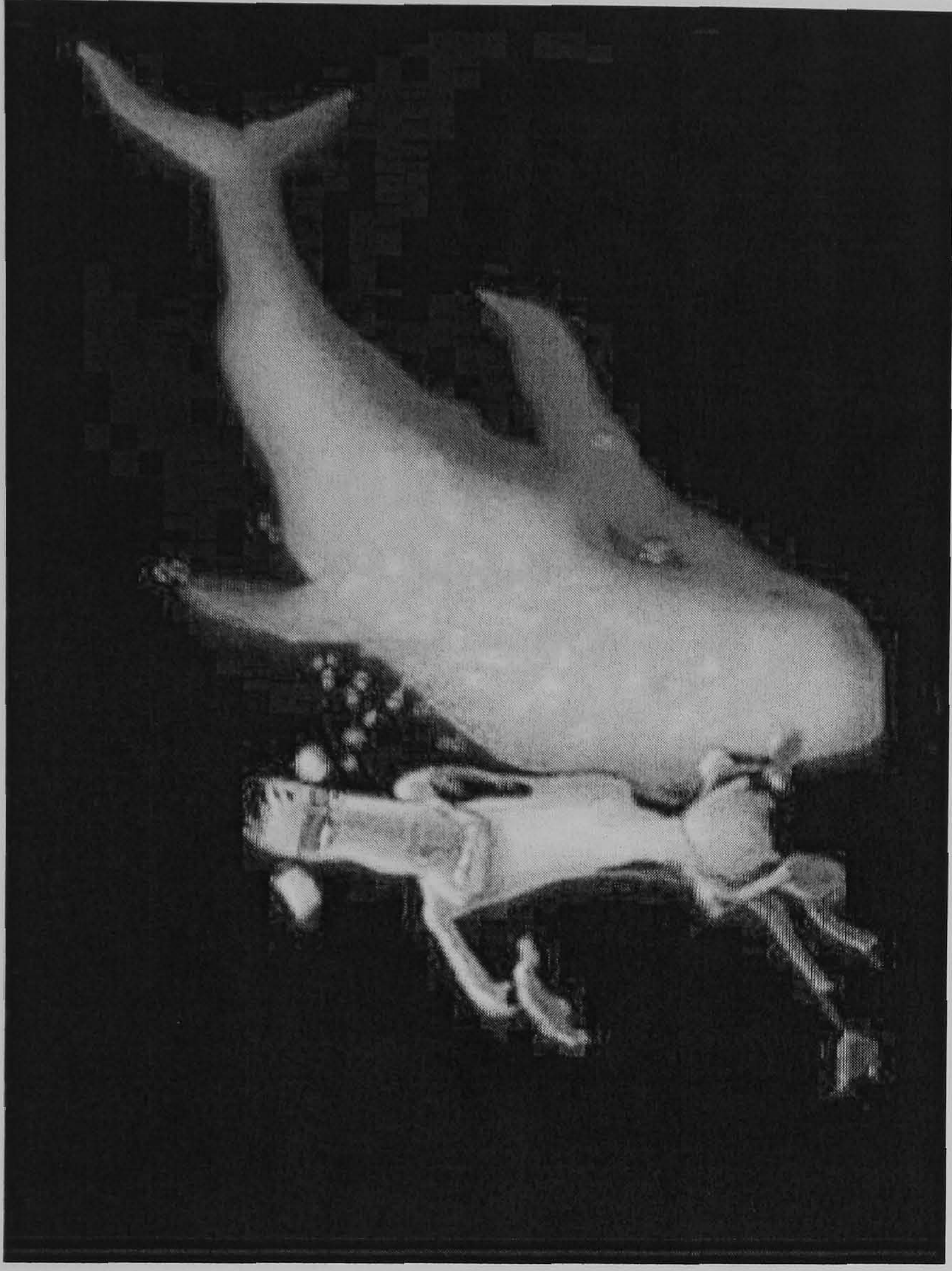


Have you seen this advert? Yes

No

Type of product .....

Name of product .....

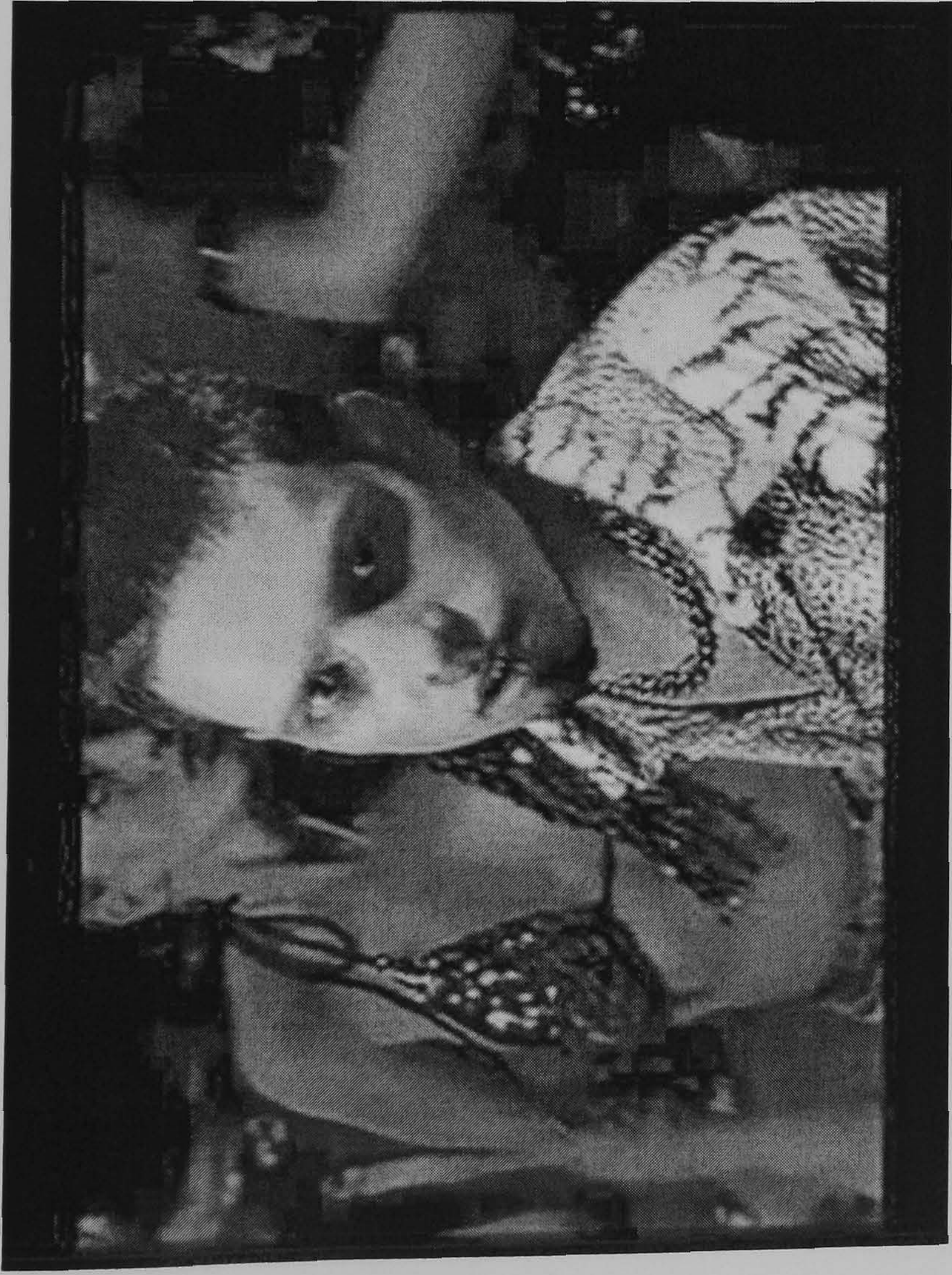


Have you seen this advert? Yes

No

Type of product .....

Name of product .....

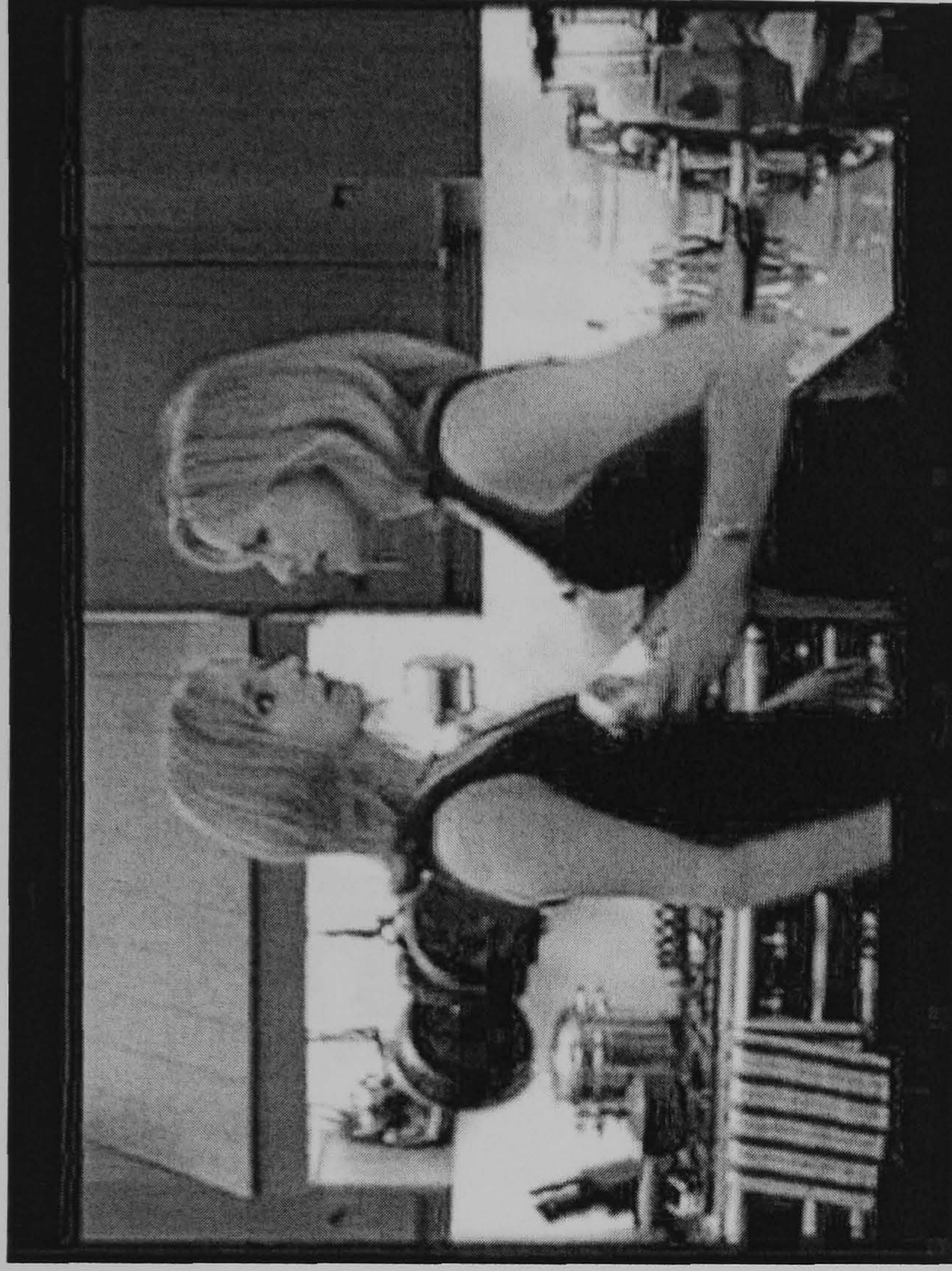


Have you seen this advert? Yes

No

Type of product .....

Name of product .....



Have you seen this advert? Yes

No

Type of product .....

Name of product .....

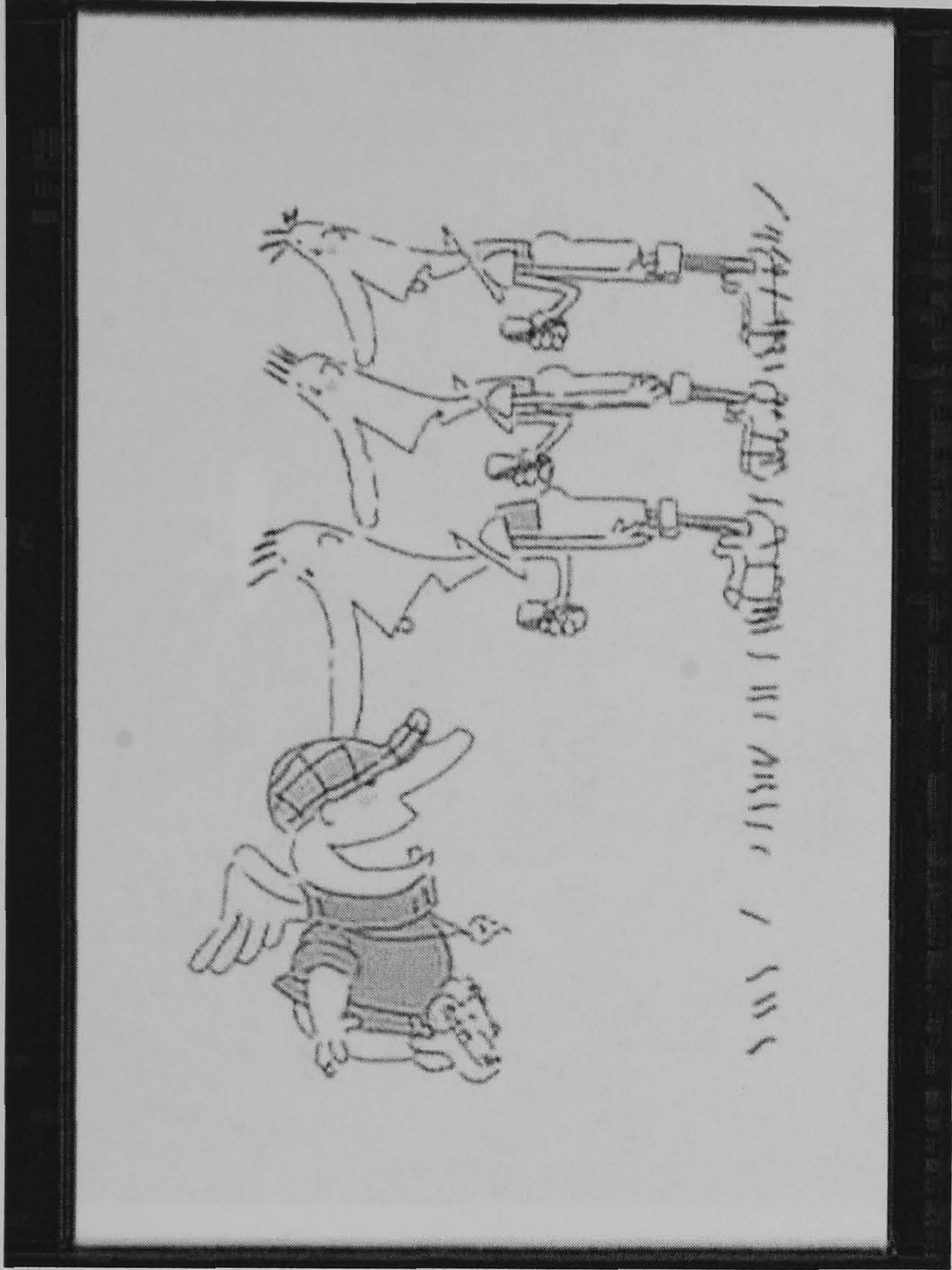


Have you seen this advert? Yes

No

Type of product .....

Name of product .....



Have you seen this advert? Yes

No

Type of product .....

Name of product .....

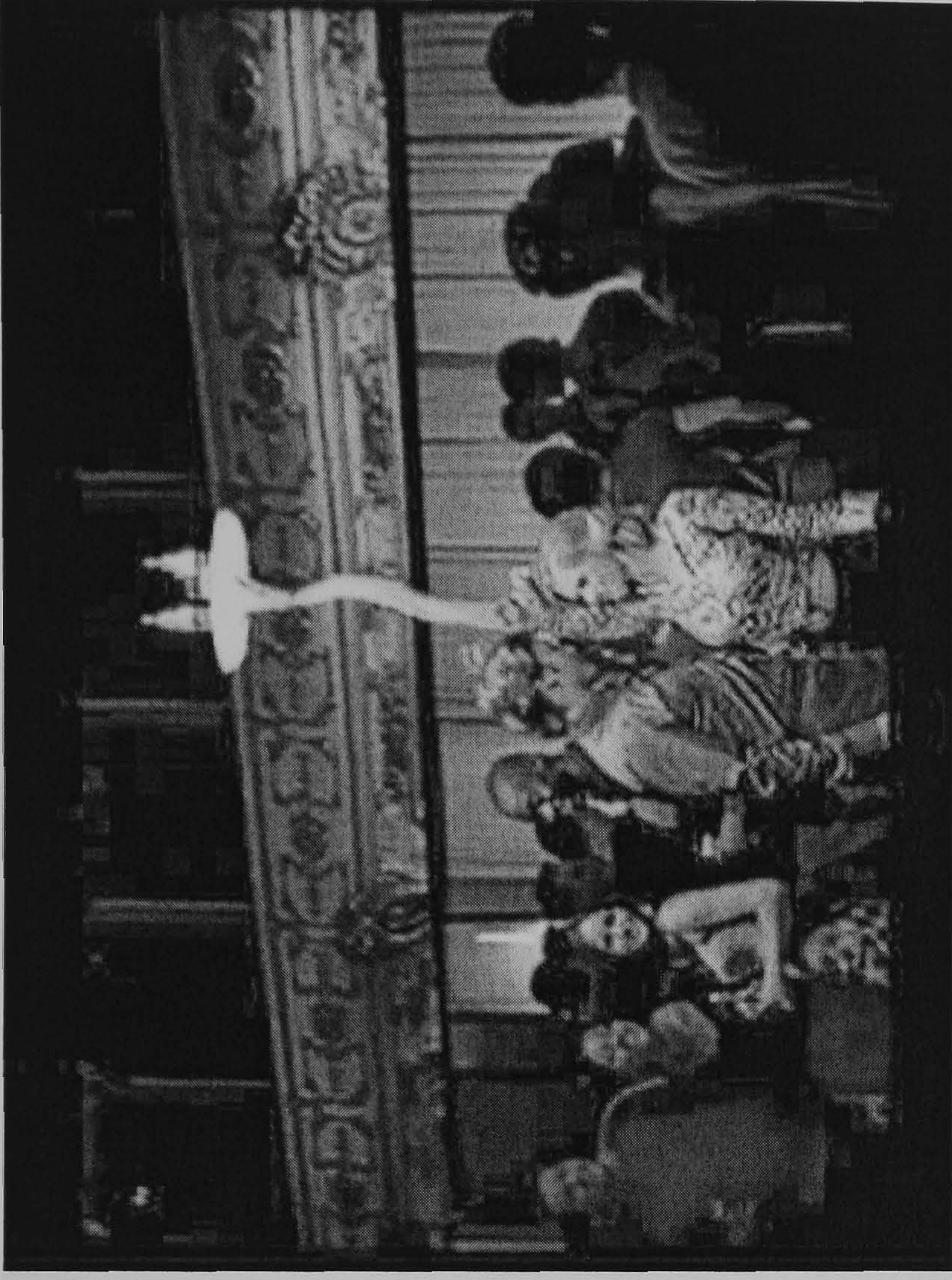


Have you seen this advert? Yes

No

Type of product .....

Name of product .....

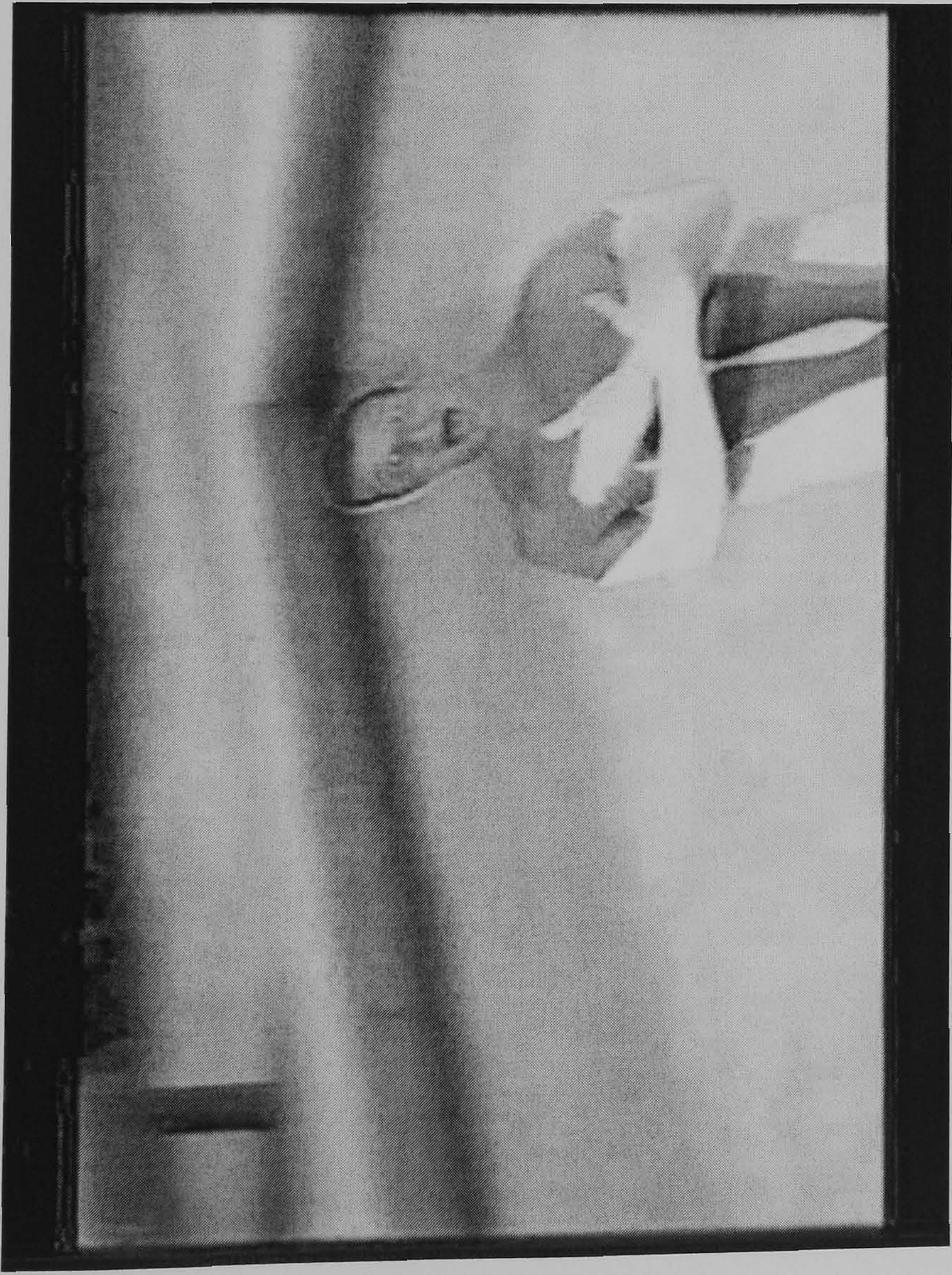


Have you seen this advert? Yes

No

Type of product .....

Name of product .....



Have you seen this advert? Yes

No

Type of product .....

Name of product .....

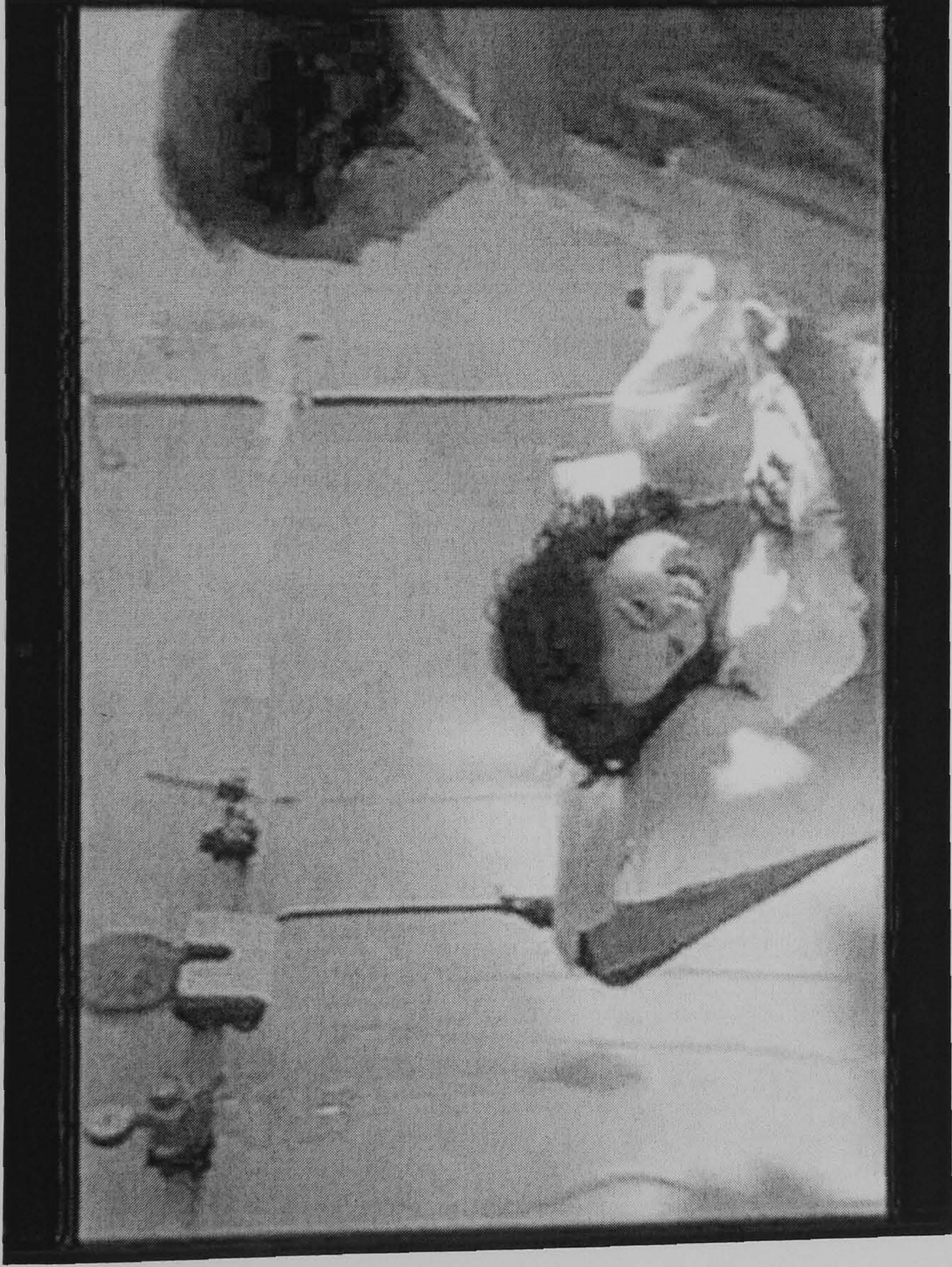


Have you seen this advert? Yes

No

Type of product .....

Name of product .....

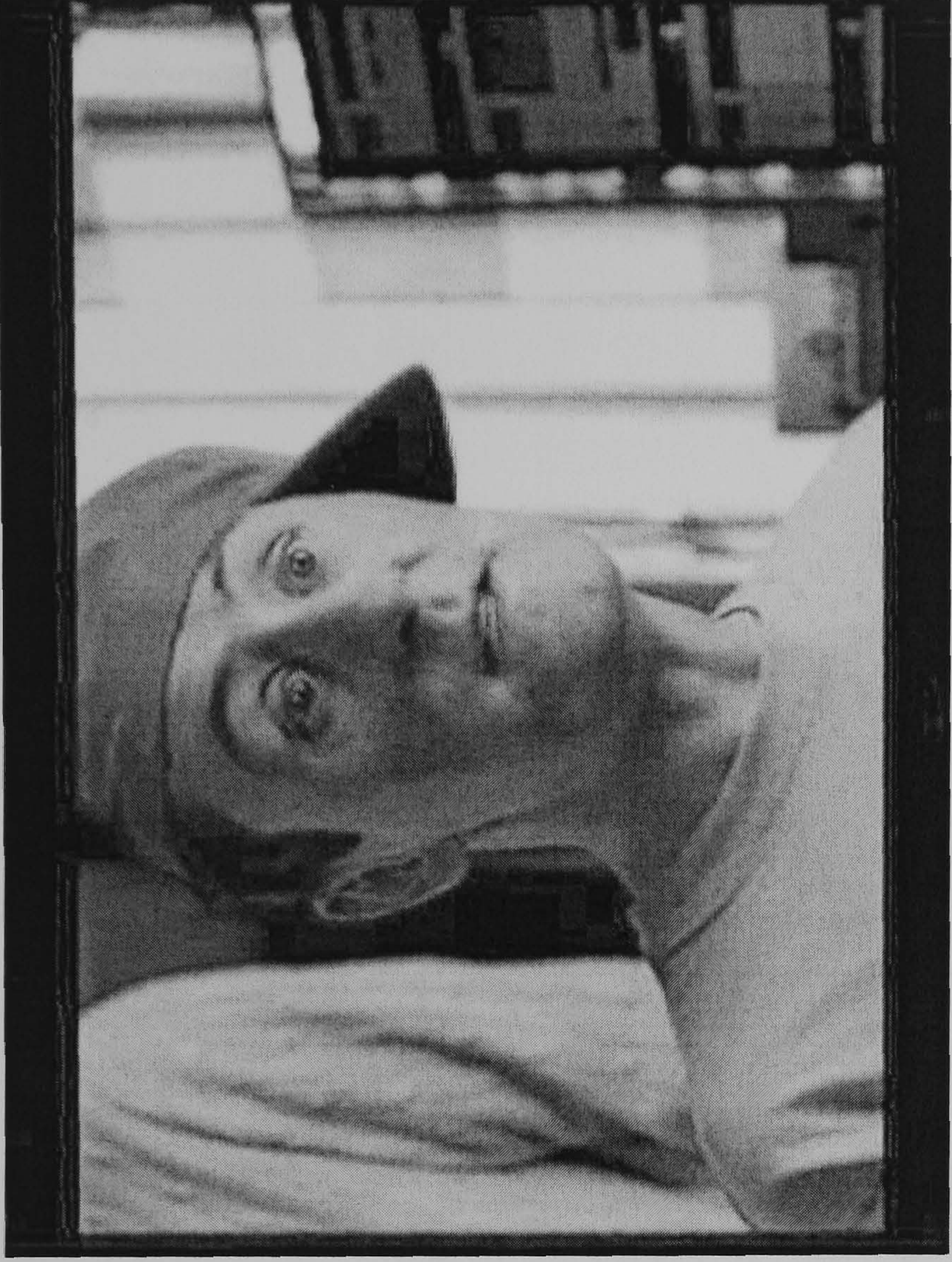


Have you seen this advert? Yes

No

Type of product .....

Name of product .....



Have you seen this advert? Yes

No

Type of product .....

Name of product .....



## **Appendix J**

### **Current broadcast advertising regulations (BCAP, 2004) for alcohol products**

## **Broadcast Advertising Regulations re alcoholic drinks (BCAP, 2004)**

### **Rule 11.8 ALCOHOLIC DRINKS**

The spirit as well as the letter of the rules in this section apply whether or not a product is shown, referred to or seen being consumed. (See also rule 1.2). Rule 11.8.1 applies to all advertising. 11.8.2 applies only to advertising for alcoholic drinks. Where soft drinks are promoted as mixers, rules 11.8.1 and 11.8.2 apply in full.

#### **Rule 11.8.1 – Rules which apply to all advertising.**

##### **11.8.1(a)**

(1) Advertisements must not suggest that alcohol can contribute to an individual's popularity or confidence, or that refusal is a sign of weakness. Nor may they suggest that alcohol can enhance personal qualities.

(2) Advertisements must not suggest that the success of a social occasion depends on the presence or consumption of alcohol.

##### **11.8.1(b)**

Advertisements must not link alcohol with daring, toughness, aggression or anti-social behaviour.

##### **11.8.1(c)**

Advertisements must not link alcohol with sexual activity or success or imply that alcohol can enhance attractiveness.

##### **11.8.1 (d)**

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Advertisements must not suggest that regular solitary drinking is acceptable or that drinking can overcome problems.

##### **11.8.1(e)**

*[N.B. As proposed in Section 3 of the BCAP consultation paper published on 15 March 05, this rule and guidance may be amended.]*

Advertisements must not suggest that alcohol has therapeutic qualities nor offer it as a stimulant, sedative, mood-changer or to boost confidence. There must be no suggestion that physical or other performance may be improved by alcohol or that it might be indispensable.

##### **11.8.1 (f)**

Advertisements must not suggest that a drink is to be preferred because of its alcohol content nor place undue emphasis on alcoholic strength. (This does not apply to low alcohol drinks. See 11.8.3).

##### **11.8.1 (g)**

(1) Advertisements must not show, imply or encourage immoderate drinking. This applies both to the amount of drink and to the way drinking is portrayed.

(2) References to, or suggestions of, buying repeat rounds of drinks are not acceptable. (Note: This does not prevent, for example, someone buying a drink for each of a group of friends. It does, however, prevent any suggestion that other members of the group will buy any further rounds.)

(3) Alcoholic drinks must be handled and served responsibly.

##### **11.8.1(h)**

Advertisements must not link drinking with the use of potentially dangerous

machinery, with behaviour which would be dangerous after consuming alcohol (such as swimming) or with driving.

### **11.8.2 – Additional rules for alcohol advertisements.**

#### **11.8.2(a)**

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(1) Advertisements for alcoholic drinks must not be likely to appeal strongly to people under 18, in particular by reflecting or being associated with youth culture.

(2) Children must not be seen or heard, and no-one who is, or appears to be, under 25 years old may play a significant role in advertisements for alcoholic drinks. No-one may behave in an adolescent or juvenile way.

Notes: (1) See the exception in 11.8.2 (a)(3)

(2) In advertising for low alcohol drinks, anyone associated with drinking must be, and appear to be, at least 18 years old.

(3) There is an exception to 11.8.2 (a)(2) for advertisements in which families are socialising responsibly. In these circumstances, children may be included but they, and anyone who is, or appears to be, under 25 must only have an incidental role. Nevertheless, it must be explicitly clear that anyone who appears to be under the age of 18 is not drinking alcohol.

#### **11.8.2(b)**

Advertisements for alcoholic drinks must not show, imply or refer to daring, toughness, aggression or unruly, irresponsible or anti-social behaviour.

#### **11.8.2(c)**

Advertisements for alcoholic drinks must not appear to encourage irresponsible consumption.

#### **11.8.2(d)**

Advertisements for alcoholic drinks must not normally show alcohol being drunk in a working environment.

#### **11.8.2(e)**

Alcoholic drinks must not be advertised in a context of sexual activity or seduction but may include romance and flirtation subject to rule 11.8.2 (a) (Youth appeal).

### **11.8.3 – Low alcohol drinks.**

Exceptions to 11.8.1 and 11.8.2 apply to advertisements for drinks containing 1.2% alcohol by volume or less so long as the low alcohol content is made clear. (The exceptions are not granted if the advertising might promote a product of higher alcoholic strength or might conflict with the spirit of the rules.)

The exceptions are:

(a) 11.8.2 (a)(2): Anyone associated with drinking must be, and appear to be, at least 18 years old.

(b) The advertisements need not comply with:

11.8.1 (f)

11.8.1 (g)(1) or (2)

# Appendix K

## Parameters and s.e. for SEM

## Parameters and standard errors for longitudinal structural equation models

Measure	T1		T4		T7	
	Mean	S.E.	Mean	S.E.	Mean	S.E.
ABEC	43.05	0.70	44.7	0.65	46.84	0.58
TV score	22.63	0.67	22.2	0.65	22.1	0.75
Family attitude	4.62	0.12	5.3	0.10	5.65	0.11
Family behaviour	3.59	0.11	3.52	0.10	3.69	0.11
Peer attitude	5.54	0.13	6.03	0.12	6.40	0.10
Peer behaviour	1.51	0.12	1.97	0.12	2.62	0.12
Alc advert knowledge Implicit	2.45	0.14	3.0	0.17	2,83	0.17
Alc advert knowledge Abstract	1.54	0.13	2.19	0.14	1.67	0.14
Alc advert knowledge Explicit	0.51	.07	1.65	0.13	1.26	0.13
IAM	116.97	1.52	111.38	1.81	106.76	2.06