The Impact of Brand and Product Placements in Electronic Games

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KEYWORDS

Electronic games
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ABSTRACT

In an environment where it has become increasingly difficult to attract consumer attention, marketers have begun to explore alternative forms of marketing communication. One such form that has emerged is product placement, which has more recently appeared in electronic games. Given changes in media consumption and the growth of the games industry, it is not surprising that games are being exploited as a medium for promotional content. Other market developments are also facilitating and encouraging their use, in terms of both the insertion of brand messages into video games and the creation of brand-centred environments, labelled ‘advergames’. However, while there is much speculation concerning the beneficial outcomes for marketers, there remains a lack of academic work in this area and little empirical evidence of the actual effects of this form of promotion on game players.

Only a handful of studies are evident in the literature, which have explored the influence of game placements on consumers. The majority have studied their effect on brand awareness, largely demonstrating that players can recall placed brands. Further, most research conducted to date has focused on computer and online games, but consoles represent the dominant platform for play (Taub, 2004). Finally, advergames have largely been neglected, particularly those in a console format. Widening the gap in the literature is the fact that insufficient academic attention has been given to product placement as a marketing communication strategy overall, and to games in general. The unique nature of the strategy also makes it difficult to apply existing literature to this context.

To address a significant need for information in both the academic and business domains, the current research investigates the effects of brand and product placements in video games and advergames on consumer attitude to the brand and corporate image. It was conducted in two stages. Stage one represents a pilot study. It explored the effects of use simulated and peripheral placements in video games on players’ and observers’ attitudinal responses, and whether these are influenced by involvement with a product category or skill level in the game. The ability of gamers to recall placed brands was also examined. A laboratory experiment was
employed with a small sample of sixty adult subjects drawn from an Australian east-coast university, some of who were exposed to a console video game on a television set. The major finding of study one is that placements in a video game have no effect on gamers’ attitudes, but they are recalled.

For stage two of the research, a field experiment was conducted with a large, random sample of 350 student respondents to investigate the effects on players of brand and product placements in handheld video games and advergames. The constructs of brand attitude and corporate image were again tested, along with several potential confounds. Consistent with the pilot, the results demonstrate that product placement in electronic games has no effect on players’ brand attitudes or corporate image, even when allowing for their involvement with the product category, skill level in the game, or skill level in relation to the medium. Age and gender also have no impact. However, the more interactive a player perceives the game to be, the higher their attitude to the placed brand and corporate image of the brand manufacturer. In other words, when controlling for perceived interactivity, players experienced more favourable attitudes, but the effect was so weak it probably lacks practical significance. It is suggested that this result can be explained by the existence of excitation transfer, rather than any processing of placed brands.

The current research provides strong, empirical evidence that brand and product placements in games do not produce strong attitudinal responses. It appears that the nature of the game medium, game playing experience and product placement impose constraints on gamer motivation, opportunity and ability to process these messages, thereby precluding their impact on attitude to the brand and corporate image. Since this is the first study to investigate the ability of video game and advergame placements to facilitate these deeper consumer responses, further research across different contexts is warranted. Nevertheless, the findings have important theoretical and managerial implications.

This investigation makes a number of valuable contributions. First, it is relevant to current marketing practice and presents findings that can help guide promotional strategy decisions. It also presents a comprehensive review of the games industry and associated activities in the marketplace, relevant for marketing practitioners.
Theoretically, it contributes new knowledge concerning product placement, including how it should be defined, its classification within the existing communications framework, its dimensions and effects. This is extended to include brand-centred entertainment. The thesis also presents the most comprehensive analysis available in the literature of how placements appear in games. In the consumer behaviour discipline, the research builds on theory concerning attitude formation, through application of MacInnis and Jaworski’s (1989) Integrative Attitude Formation Model. With regards to the games literature, the thesis provides a structured framework for the comparison of games with different media types; it advances understanding of the game medium, its characteristics and the game playing experience; and provides insight into console and handheld games specifically, as well as interactive environments generally. This study is the first to test the effects of interactivity in a game environment, and presents a modified scale that can be used as part of future research. Methodologically, it addresses the limitations of prior research through execution of a field experiment and observation with a large sample, making this the largest study of product placement in games available in the literature. Finally, the current thesis offers comprehensive recommendations that will provide structure and direction for future study in this important field.
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GLOSSARY OF KEY TERMS

**Advergame** A form of branded entertainment, specifically advertainment, that features advertising messages, logos and trade characters in a game format (Mallinckrodt and Mizerski, 2007). An advergame is a brand-centred gaming environment, commissioned by an advertiser.

**Advertainment** A cross between advertising and entertainment (Deal, 2005), whereby an advertiser largely creates, controls and pays for the entertainment content in which a brand appears. The advertiser, as opposed to a game publisher/filmmaker/author, incorporates a brand into his/her own creative work. Advertainment is a sub-category of branded entertainment.

**Brand attitude** A general and enduring positive or negative evaluative judgment of, or feeling toward, a brand (Shimp, 2000). It features a cognitive and affective component, though a third one, conative, has been proposed (Lutz, 1977). Brand attitude represents one key consumer behaviour objective marketing communications strategies may satisfy.

**Brand awareness** A consumer’s ability to recall and recognise a brand, as reflected by their ability to identify it under different conditions (Keller, 2003). It is a function of the attention a viewer pays to an advertisement (Aaker, 1996) and involves linking the brand to certain associations in memory (Keller, 2003). Brand awareness represents a consumer behaviour objective for marketing communications.

**Branded entertainment** The insertion of a brand within an entertainment property (Moore, 2006: p1).

**Console** Game systems connected to a television (e.g. Sony PlayStation, Microsoft Xbox and Nintendo Wii). Handheld devices (e.g. PlayStation Portable, Nintendo DS) are also a sector in the console market. Consoles represent the dominant platform for game play (Taub, 2004).
**Corporate image**  The total impression that an entity makes on the minds of individuals (Dichter, 1985: p75). It is the image associated with the name of an organisation (Gatewood, Gowan and Lautenschlager, 1993: p416) and the associations that consumers have in memory (Keller, 2003). It is an important objective of marketing communications.

**Covert**  Placements are covert in nature, meaning that they tend to project a non-commercial character and therefore may not be recognised by consumers as a form of promotion. Product placement is a hybrid message so, unlike other forms of paid communication, it operates by stealth through the planned but unobtrusive injection of branded products into media content (Babin and Carder, 1996a; Balasubramanian, 1994). This represents a key criticism of the strategy by consumer advocacy groups, anti-consumerists, public policy officials, the media and some consumers.

**Direct experience**  The level of familiarity and prior behaviour a consumer has had with an attitude object (Fazio and Zanna, 1981).

**Electronic games**  Electronic games include those that can be played on console/handheld systems, wireless devices such as mobile phones, personal computers, in arcades and online.

**Excitation transfer**  Occurs when residual arousal from one stimulus combines with arousal from a subsequent stimulus, thus strengthening the affective reaction to the second stimulus (Zillmann, 1971, 1983, 1991).

**Fit**  The extent to which a placement matches the context in which it is placed, in terms of whether it is realistic. This is similar to congruence. Audience perceptions of fit across product/medium/communicator/message dimensions are important for the success of product placement.

**Flow**  A process of optimal experience accompanied by a loss of self-consciousness, which occurs as a result of a seamless sequence of responses facilitated by machine interactivity (Hoffman and Novak, 1996; Novak, Hoffman and Yung, 2000). It occurs when an interaction is fun and enjoyable (Csikszentmihalyi and LeFevre,
1989), the user focuses their attention on the interaction, and they perceive a balance between this challenge and their skills (Hoffman and Novak, 1996).

**Gamers** Includes both players and observers of electronic games.

**Immersion** A psychological state that represents an outcome of an interactive medium’s ability to focus users’ attention (Witmer and Singer, 1998). It is similar to involvement and engagement.

**In-game advertising** The injection of brands and products into existing games is often referred to as ‘in-game advertising’ in the practitioner literature (see, Baar and Flass, 2003; Lienert, 2004). ‘Product placement in games’ is a broader term, which encompasses this form of promotion.

**Instrumental media use** Active and purposive media use. Instrumental media use refers to an individual who is involved and seeking certain media content for informational purposes (they possess extrinsic motivation and are ‘goal directed’) (Hoffman and Novak, 1996; Rubin, 1994). This is one type of media orientation.

**Integrative Attitude Formation Model** Developed by MacInnis and Jaworski (1989), the Integrative Attitude Formation Model advances the work of Petty and Cacioppo’s (1983; 1986a,b) Elaboration Likelihood Model. It provides a framework for understanding information processing and the attitude formation process.

**Interactive/ internet marketing** A form of marketing communication whereby marketing messages are delivered using interactive media, which allow for a back-and-forth flow of information (Belch and Belch, 2001). With interactive media, users can participate in and modify the form and content of the information they receive in real time.

**Interactivity** The degree to which two or more communication parties can act on each other, on the communication medium, and on the message, and the degree to which such influences are synchronised (Liu and Shrum, 2002: p54). Johnson, Bruner and Kumar (2006) define it as the extent to which an individual perceives a
communication to allow mutual action; to provide responses that are appropriate and relevant; to respond immediately; and to provide non-verbal information. Interactivity represents one attribute of a computer-mediated environment.

**Intrusiveness** The degree to which a person deems the presentation of information as contrary to his or her goals (Edwards, Li and Lee, 2002: p85). This is a major criticism of traditional advertising.

**Peripheral placement** Brand appearances in the background of an entertainment property, such as in a game’s scenery. This represents a ‘brand’ placement. Peripheral placements tend to be visual only.

**Plot connected placement** The integration of a brand with a story’s plot. This type of placement involves a combination of visual and verbal components and can vary in intensity from a mention of the brand and a brief appearance, to the brand’s central role in the plot and identification with a character (Russell, 1998). A plot connected placement tends to be more prominent than a peripheral placement. In the most extreme case, a brand may be assimilated with program content to the point that it becomes the plot (Sheehan and Guo, 2005).

**Presence** An individual’s mediated perception of an environment so that it is imagined as real (Lombard and Ditton, 1997). Induced by vividness, interactivity and focused attention (Lombard and Ditton, 1997), presence provides a feeling of being present in an environment and enables an individual to experience psychological states such as virtual experience (Hoffman and Novak, 1996; Li, Daugherty and Biocca, 2001). Also called telepresence.

**Product involvement** Product knowledge or experience and therefore the personal relevance of a particular communication (Reardon, 1990; Zaichkowsky, 1994).

**Product placement** A form of marketing communication, which may or may not be paid for, where messages about goods, services, brands, organisations, people and ideas are embedded into content such as film, television programs, newspapers, novels, music, and games in such a way that the sponsor/brand is identified but the
message appears non-commercial, with information presented visually, verbally, integrated with a plot and/or available for use for the purpose of influencing audiences unobtrusively.

**Product placement in games**  The term used to describe the promotional strategy of placing brands and branded products in electronic games specifically.

**Ritualistic media use**  Occurs when an individual is in a less active or goal-directed state and uses a medium more habitually for diversion and time consumption (they possess intrinsic motivation and are an ‘experiential viewer’) (Davis, Bagozzi and Warshaw, 1992; Hoffman and Novak, 1996). This is one type of media orientation.

**Use simulated placement**  A placement that can be used in a game (i.e. product usage is simulated in the game medium). Interactivity allows players to select, alter and engage with products integrated into a game’s plot. This represents a ‘product’ placement.

**Verbal placement**  A verbal or auditory placement occurs when a brand is mentioned in a dialogue (Russell, 1998).

**Verisimilitude**  The ‘air of truth’ or realism that placements lend to entertainment media (Balasubramanian, Karrh and Patwardhan 2006).

**Video game**  Games played on console systems.

**Visual placement**  Involves placing a brand in the background of a show (Russell, 1998). It is similar to a peripheral placement.

**Vividness**  The richness of a mediated environment and the way that environment presents information that engages the senses (Laurel, 1991; Naimark, 1990; Rheingold, 1991; Steuer, 1992). It is increased by media tools such as video, audio, animation and 3D imaging.
STATEMENT OF ORIGINALITY

This work has not previously been submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signed:

Kerri-Ann L. Kuhn ________________________

Date _________________
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1.0 INTRODUCTION

1.1 Background to the Research

Today, marketers responsible for developing promotional strategy are faced with a challenging task. Competition for consumer attention is fierce due to increased clutter, a crowded media environment and audience fragmentation. The desensitisation of viewers to commercial messages, a general dislike of advertising and the active avoidance of promotional content has also made it increasingly difficult to reach target audiences (Alwitt and Prabhaker, 1994; Olney, Holbrook and Batra, 1991; Sandler and Secunda, 1993). As a result, marketers are being forced to find new ways to communicate with consumers and more effective methods of retaining visibility. This has raised the profile of non-traditional forms of marketing communication. One emerging form is product placement, which represents the central issue of this thesis.

Traditionally used in film, product placement first appeared in the 1920s, but it was not until the 1980s-90s that the strategy gained popularity (Galician and Bourdeau, 2004). Its use can now be noted across a range of media, though it remains a communications strategy that is still little understood. Few definitions are offered in the literature as to what constitutes this form of promotion, and where they are presented, product placement is often described as a form of advertising, whereby branded products are placed in the content of mass media programming (Avery and Ferraro, 2000; Belch and Belch, 2001). Such definitions are inadequate, as they fail to capture the complexity of the strategy, or the various conditions by which it can occur. To better reflect the true nature of product placement, the following definition has been developed as part of this research:

Product placement is a form of marketing communication, which may or may not be paid for, where messages about goods, services, brands, organisations, people and ideas are embedded into content such as film, television programs, newspapers, novels, music, and games in such a way that the sponsor/brand is identified but the message appears non-commercial, with information presented visually, verbally, integrated with a plot and/or available for use for the purpose of influencing audiences unobtrusively.
The aforementioned definition incorporates a new medium, which has recently begun to be exploited for product placement messages: electronic games. A multi-billion dollar industry, games have been experiencing strong and rapid growth in recent times. A review of the industry and key trends shaping the market presented later in this chapter, shows they have grown to become a key segment in the entertainment category (Williams, 2002), drawing an increasing number of players from a broader demographic (Lewis, 2004). It is therefore not surprising that they are being used to carry promotional messages. Primarily, this has occurred through the incorporation of brands into game backgrounds and the inclusion of products in such a way they can be used by game players. There are no definitions available in the literature which distinguish between these specific forms, but they are separated in this study and defined as ‘peripheral’ and ‘use simulated’ placements respectively. It is proposed that this also represents the distinction between a ‘brand placement’ and a ‘product placement’.

These placements can be featured in a variety of different games across many platforms, including consoles, computers, the web, wireless devices and arcade systems. Firms are also creating their own content in which their brands are featured, in some ways reverting back to the early days of radio and television when advertisers created their own programs (for a complete discussion see Turner, 2004a). Labelled ‘advergames’, this represents a form of advertainment, which is a cross between advertising and entertainment (Deal, 2005). An example is presented by BMW, which has created not only its own advergames, but also series of short films (adverfilms) (Patton, 2002).

Some authors contend that advertainment is a new form of product placement (see, for example, Kretchmer, 2004). Others argue it is a distinct strategy (see, for example, Grossman, 2005a who makes this claim in arguing for regulation). The difference between the two concerns who creates, controls and pays for the content in which the brand appears, whether it be an advertiser, or a game publisher/filmmaker/author who incorporates a brand into their own creative work. As a result, the types of placements, degree of brand emphasis, existence of competing brands and contractual agreements vary. From a consumer perspective however, the distinction is often unclear, as the line between entertainment and advertising has
become blurred. This confusion is compounded by the fact that the details of placement deals are often not disclosed.

The current thesis adopts the view that the inclusion of brands and products into electronic games is product placement, consistent with the perspective of other game researchers (see, for example, Hernandez et al., 2004a,b; Nelson, Keum and Yaros, 2004). This view is maintained in the case of brand appearances which replicate true sponsorship (such as at a sporting event), consistent with Avery and Ferraro’s (2000) classification. The term ‘product placements in games’ is used to refer to the strategy. Of interest for the current research is placements featured in console-based video games and advergames, and their influence on gamers. Consoles are defined to include systems connected to a television, as well as handheld devices. Gamers constitute both players and observers, since games are often experienced by groups of people who take turns ‘playing’ (ESA, 2004a).

It has been suggested that electronic games are becoming the most powerful marketing medium ever created (see, for example, Nelson, 2002), but there is insufficient evidence to validate their use as a promotional tool. Empirical studies in the social science literature have explored the impact of game play on violence, social development and learning (discussed later in this chapter), though there remains a lack of work in the marketing and consumer behaviour disciplines. Some research has emerged in the area of online gaming and computer games (presented in Chapter 2), but there is little in the area of console games, which represent the dominant platform for play (Taub, 2004). Literature concerning advergames, in particular, is scant. Further, of those studies conducted, most have examined the effects of product placement in games on brand awareness. Very few have begun to investigate deeper gamer responses to the strategy.

There is also a gap in the literature with regards to product placement in traditional media, making it difficult to predict consumer responses in a game context. Further, where research is available, it cannot be assumed the same effects will be evident in games, since they possess characteristics which distinguish them from other media. Likewise, although product placement shares similarities with other promotional forms, namely advertising, sponsorship and interactive marketing, it does not mean
the same consumer behaviour outcomes can be achieved. These fields can only provide insights that assist in understanding the strategy.

Product placement falls within the domain of marketing communications, but it does not fit neatly within the existing communications framework. It is for this reason that some practitioners identify it within a new category labelled branded entertainment: ‘the insertion of a brand within an entertainment property’ (Moore, 2006: p1). Nevertheless, all types of marketing communications seek to satisfy three key consumer behaviour objectives (Belch and Belch, 2001; Rossiter and Percy, 1997). There is evidence to suggest that two important goals for marketers pursuing a product placement in games strategy are to improve brand attitudes and corporate image (Avery and Ferraro, 2000). Validation of these outcomes is therefore particularly pertinent, in order to better guide marketing strategy decisions.

In sum, the use of product placement in electronic games is an emerging area with only a brief history compared to other promotional forms. The practitioner literature, however, indicates this is a key topic for practicing marketers. Already there are a number of developments and other factors attracting them to games, but as the profile of the industry rises to new heights in the coming years, it is anticipated games will attract even more attention from the marketing field, and that the number of brand appearances in the medium will grow. The need to understand their impact is therefore significant, with the role of research in facilitating this paramount.

1.2 Research Question and Hypotheses

The purpose of the current research is to contribute to the emerging area of product placement in games, and specifically to fill a gap in the literature with regards to this strategy’s impact on consumer behaviour. As discussed in the preceding section, there is a need to investigate the effects of product placement in a game medium and its ability to achieve key communication objectives pertaining to brand attitudes and corporate image. This is particularly critical considering recent industry developments, which are encouraging use of the strategy by an increasing number of marketers. The current study aims to address these issues and make a contribution
that will directly affect those in the industry, as well as advance knowledge in the academic arena. It addresses the following research question:

What is the effect of brand and product placements in games on the consumer’s response in terms of attitude to the brand and corporate image of the brand manufacturer?

In examining this research question, a number of hypotheses are developed in Chapter 3. These result from the findings of a pilot study, as well as a review of the extant literature in several areas. This includes product placement; other related marketing communications fields such as advertising, sponsorship and interactive marketing; and consumer behaviour. The hypotheses are as follows:

H1: An individual exposed to brand and product placement in a video game will report a higher Attitude to that Brand ($A_{BR}$) than a similar individual who has not been exposed to the placement.

H1a: An individual exposed to brand and product placement in a video game will report a higher Corporate Image ($CI$) of the brand’s manufacturer than a similar individual who has not been exposed to the placement.

H2: An individual exposed to brand and product placement in an advergame will report a higher $A_{BR}$ than a similar individual who has not been exposed to the placement.

H2a: An individual exposed to brand and product placement in an advergame will report a higher $CI$ of the brand’s manufacturer than a similar individual who has not been exposed to the placement.

H3: Any main effect of exposure to brand and product placement in a video game or advergame on $A_{BR}$ and $CI$ of the brand’s manufacturer will be influenced by:
- an individual’s involvement with the product category
- an individual’s skill level in the game
- an individual’s skill level in relation to the medium generally, and
- the game’s perceived level of interactivity.
The study conducted to test these hypotheses is detailed in Chapter 4.

1.3 Justification for the Research

Trends in market are making it more difficult for marketers to reach consumers using traditional forms of mass media advertising, thereby encouraging the use of alternate forms of communication. Product placement is one strategy that has gained popularity. At the same time, the games industry has been experiencing tremendous growth. This has attracted the interest of practitioners who have identified electronic games as a marketing medium. The injection of products and brands is being spurred by a number of industry developments and much speculation in the trade literature regarding beneficial outcomes. There is however an absence of academic work to validate the use of games as a promotional tool, and a lack of empirical evidence concerning the effects on consumers of marketing messages in this medium. In fact, all aspects of gaming have been largely neglected.

Research into the effects of placements in games is therefore justified on the basis of the strategy’s growth, the size of the games industry (and associated developments attracting marketers to the medium), as well as the significant gap in the literature concerning effects. These issues are discussed in the following sections. Apart from its theoretical implications for the marketing communications and consumer behaviour disciplines, such research will provide a basis to guide the strategy decisions of practicing marketers.

1.3.1 The Changing Marketing Communications Landscape: Growth of Alternative Media Strategies and Product Placement

While advertising via mass media has been a staple of many promotional plans for decades, the market is now seeing a shift in promotional strategy. The effectiveness of obtrusive forms of marketing communication such as advertising is being questioned for a number of reasons. First, the market has become over saturated at the same time the cost has risen (Russell, 2002). Second, viewers are increasingly tuning out of formal advertisements (Elliott, 1992; Lipman, 1991), facilitated in part by the advent of TiVo and DVRs. Finally, advertising messages demand attention and can generate negative perceptions and attitudes (Clancey, 1994; Ha, 1996; Li,
Edwards and Lee, 2002), particularly among Generation X and Y consumers who are more aware, knowledgeable and cynical toward advertising (Donaton, 1993; Hornblower, 1997; Miller, 1993; Neuborne and Kerwin, 1999). Intrusiveness, or ‘the degree to which a person deems the presentation of information as contrary to his or her goals’ (Edwards, Li and Lee, 2002: p85) is a major criticism, and has been recognised as a cause of advertising annoyance and avoidance. As a result of these trends, marketers have now become more willing to explore alternate media and non-traditional forms of communication.

According to PQ Media (2006), traditional advertising and marketing worldwide grew 4.9% to $413.45 billion in 2005, while total spending on alternative media strategies grew 18.8% to almost $98 billion. From 2000 to 2005, the compound annual growth rate for spending on alternative media strategies was 13% while on traditional media it was only 2.5%. Within this grouping, online advertising represents the fastest growing segment, while entertainment advertising and branded entertainment represents the largest. To illustrate, in 2005 spending on online advertising increased almost 35% to $17.5 billion, while spending on entertainment advertising and branded entertainment increased a little over 16% to $44.7 billion (PQ Media, 2006).

The most significant form of entertainment advertising/branded entertainment is product placement. This market increased at a compound annual rate of 16.3% from 1999 to 2004 (PQ Media, 2005). In 2004, spending increased 30.5% (Graser, 2005), at the same time advertising and marketing expenditure grew just 7% (Friedman, 2005; Klaassen, 2005). This was represented by significant growth in television placements (up 46% to $1.88 billion), theatrical film (up 15% to $1.25 billion), and other media (up 20% to $326 million) (Friedman, 2005). Television placements now account for approximately for 57.5% of the total value of the product placement market, with film at 33.4% and other media at 9.1% (Graser, 2005; PQ Media, 2005). The share of paid placements has also grown from 19% in 1974 to 29% in 2004, with barter arrangements (where the product is given as a free sample for use as a prop) increasing from 58% to 64% respectively (Friedman, 2005; Graser, 2005). Gratis placements (where branded products are used without manufacturer
involvement) accounted for 24% of the market’s value in 1974, but represented just 7% in 2004 (PQ Media, 2005; Friedman, 2005).

The cost of product placement is rising according to placement agents, studio representatives and corporate marketing executives (Karrh, McKee and Pardun, 2003). The costs associated with these deals are often not made publicly available, though in the 1990s it was estimated the inclusion of a brand in a film cost between $5000 and $250 000 (DeLorme, Reid and Zimmer, 1994), with visual placements being the least expensive, followed by verbal placements, and placements that involve character usage (DeLorme and Reid, 1999). More recently, FedEx is alleged to have contributed 80% of the production costs of the film *Cast Away* (Maynard and Scala, 2006). In television, visual exposure can cost around $4000, while character usage and mention of a brand can cost more than $225 000 (Chunovic, 2002). Companies often pay less for a season’s worth of placements than they do for a 30 second advertisement in the same time slot (Wells, 1996). The costs however are substantially higher where tie-in promotions are used. In the U.S alone, it is estimated that Smirnoff, Omega and BMW spent $77 million on marketing tied to the James Bond film *Tomorrow Never Dies* in which they appeared (Cowlett, 2000).

Most commonly, product placement has been used in film (D’Orio, 1999), as well as cable and broadcast television programs (Elliott, 2002; Fitzgerald, 2002; Friedman and Chura, 2001; Vagnoni, 2001). Given the growth and increased costs, it is not surprising that other media are drawing marketing dollars. More recently, placements have emerged in novels (Nelson, 2004), music CDs/videos (Englis, Solomon and Olafsson, 1993; Salzman, 2006), blogs (Maclean’s, 2005), live shows such as Broadway musicals (Elliott, 2005; Matthews, 2005), and electronic games (Gunn, 2001; Nelson, Keum and Yaros, 2004; Rodgers, 2002). Video game advertising and advergaming in particular are attracting increased spending. In fact, game placements represent the largest alternative marketing segment, in terms of the concentration of marketing expenditure in recent years (PQ Media, 2006).

1.3.2 Games: A Growing Medium for Marketers
The incorporation of brands into game content is not entirely new (take for example the case of Marlboro advertisements that were inserted into the early Sega games
during the 1980s). It is only recently however that the market has witnessed a flurry of activity in this area, both in terms of the scale and scope of in-game marketing activity. Estimates of spending on in-game advertising range from $27 million to $34 million (Devaney, 2005; Keighley, 2004). By 2010, this could rise to anywhere between $800 million to $2.5 billion (Anderson, 2006; Keighley, 2004; Shields, 2005). In 2004, American marketers spent $117 million on custom-built games for specific brands, with estimates this could rise to almost a billion by 2009 (Marketing Week, 2006; Philips, 2005). These figures demonstrate that marketing in games is still in its infancy compared to in other media, but some are predicting games will become an advertising medium as mainstream as television (see, for example, Reid, 2004). The global video game advertising sector is expected to be a $55 billion industry by 2009 (Powell, 2006).

The previous discussion identifies two broad ways in which games can be used as a marketing medium. The first is via the injection of brands and products into existing games, often referred to as ‘in-game advertising’ in the practitioner literature (Baar and Flass, 2003; Lienert, 2004). As an example, car racing game Gran Turismo 4 showcases more than 650 cars representing more than 80 manufacturers (Rodriguez, 2004). The second strategy involves an organisation commissioning its own game, centred around its brand. In this instance, a game maker is contracted by an advertiser to create a complete branding environment (Foege, 2005). The brand may therefore be emphasised to the point that it becomes the plot (the brand is ‘assimilated’, see, for example, Sheehan and Guo, 2005). Referred to as advergames (or sometimes viral games in the case of online versions), these have been defined as ‘a form of branded entertainment that feature advertising messages, logos and trade characters in a game format’ (Mallinckrodt and Mizerski, 2007: p87). For example, Coca-Cola is commissioning games involving brand characters, Proctor and Gamble are creating fantasy games for Pringles, Daimler Chrysler are providing virtual ‘test-drives’ of new vehicles, and the U.S Army is using them for recruitment (Delaney, 2004; Hyman, 2005; Jackson, 2005; Nakamura, 2000). Samples can be found at http://www.viralchart.com/games.php.

Electronic games can be played on console systems, handheld devices, via computers (online or using a CD), in arcades, and on mobile phones. ‘In-game
advertising’ is most common in console-based games, produced by the major industry players Sony, Microsoft and Nintendo. These games are often played using console systems connected to a television (such as PlayStation, Xbox and Wii), but hardware connectivity has allowed for their extension to related handheld devices (such as PlayStation Portable and Nintendo Game Boy or the current DS). Technological advances also mean they can be played online (the new consoles and handhelds allow for internet connection for multiplayer gaming), and sometimes PC versions are released. Advergames, on the other hand, are most common online, on CDs or mobile phones. They tend to be rudimentary, easy to learn games (casual mini-games) (Hyman, 2005), which involve minimal plot or character development and relatively basic animation (Grossman, 2005a). Their simplicity is a common criticism in gamer reviews (see, for example, GameSpot, 2007). Advergames are often given away or sold for a small fee, and may range from stand-alone games to those that are part of elaborate online communities (for a complete discussion, see Moore, 2006). Console-based advergames are also available, but these tend to be more advanced and expensive (to produce and purchase).

Placements too are becoming increasingly sophisticated. Video insertion technology is providing greater flexibility and scope (for a complete discussion see Wenner, 2004), even allowing for real time incorporation of customised placements into online games (Economist, 2005). There are two key methods for integrating brands and products into game content (though variations are discussed at section 2.4.2): they can be featured as passive background props, or as active equipment and characters (Delaney, 2004; Ebenkamp, 1998; Hein, 2004; Richtel, 2002). In the former case, brand logos may appear as part of the game scenery (a peripheral placement), whereas in the latter, customisation features enable players to select, alter and engage with products integrated into the game’s plot (use simulated placements). The V8 Supercars video game, for example, features track-side billboards for Coca-Cola, and allows players to select the make, model and colour of vehicle they wish to drive on the virtual racetrack, such as a Ford or Holden. For advergames, brands and products can be incorporated in the same way, but since the game is custom-published and written especially for a brand, marketers have complete control over brand appearances and use. As a result, there is an absence of
competitors, such as in *Ford Racing*, where only Ford track signage and vehicles are featured.

Changing media consumption patterns and developments in the games industry are responsible, at least partly, for the rise of placements in games. A review of this industry is warranted to understand the surrounding environment concerning marketing activity.

### 1.3.3 The Video Games Industry

The global entertainment and media industry is predicted to grow 6.6% annually to 2010, to then be valued at $1.8 trillion (PricewaterhouseCoopers, 2004; Zimmerman, 2006). Within that industry grouping, the video games market alone is expected to achieve growth of between 15% and 25% annually beyond 2007 (Kane, 2004; Williams, 2002). Worldwide, it is projected to be worth $55.6 billion in 2008 (Ulmer, 2004). The industry has become more structured and stable; revenues for manufacturers are increasing, software sales are rising and a more diverse audience playing. These issues are examined next.

#### 1.3.3.1 The Manufacturers

The video games industry is competitive. The market is controlled by three major console manufacturers who account for 80% of all game revenue (Taub, 2004): Sony which launched its PlayStation in 1994, Microsoft which launched Xbox in 2001 and Nintendo which launched its first home video game system in 1985. All three are direct competitors, but each of the manufacturers targets a slightly different market: Sony targets the 16 to 24 year old demographic, Microsoft’s focus is on 18 to 34 year olds, while Nintendo has traditionally concentrated on a younger audience (8 to 18 years) (Schilling, 2003). Sony is the largest and most successful manufacturer, dominating with a market share of 55% in 2000, followed by Nintendo with 26% and Sega (which has since withdrawn from the market) holding 18% (Williams, 2002). It continues as the global market leader today, with a market share of 69%, followed by Microsoft with 16% and Nintendo with 15% (Edwards and Greene, 2005). Sony has the largest and most loyal installed customer base, having sold more than 102 million PlayStation units worldwide as at May 2005 (Sony, 2006).
Of the U.S top ten best selling games in 2005, eight belonged to Sony, with two for Microsoft’s Xbox (ESA, 2006a).

Digital technology advances are driving growth, facilitating product innovation and the development of new games and consoles (Kane, 2004; RocSearch, 2004). Video game systems are becoming multi-faceted entertainment devices, with the new generation featuring installed broadband connectivity and micro-processing; this will enable improved virtual reality artistry in new game software. Unlike other media, each of the manufacturers operates a proprietary system. The first-mover advantage and mass acceptance of the product are therefore critical success factors (Gallagher and Park, 2002). The manufacturers derive the bulk of their money from software sales, selling the console units below cost (Grossman, 2005b; Schilling, 2003). This creates a large installed user base, which provides the critical mass to generate required profits. It also attracts game developers, who derive a royalty from each software unit sold (Schilling, 2003; Williams, 2002). A trend in the market has been for publishers to acquire developers to facilitate the creation of many titles. This strong network represents the console segment’s key strength and a major barrier to entry in the industry.

1.3.3.2 The Games
Global video game software spending (for console, computer, online and wireless games) is forecast to grow from $21 billion in 2002 to $30-$35 billion in 2008, with a sales growth rate in excess of 20% expected in each global region (Kane, 2004; RocSearch, 2004). The fastest growing segment is handhelds (Alpert, 2007), though console games still dominate. In the U.S, almost 230 million computer and video games were sold during 2005, with an average cost of around $50 (ESA, 2006a). Until this time, spending had been concentrated on software, driven by the price drop of consoles introduced in 2000 and 2001 (Kane, 2004; RocSearch, 2004). This slowed in 2005 as the market anticipated the release of the next generation systems in 2006-2007, Sony PlayStation 3, Microsoft Xbox 360 and Nintendo Wii (Hartig, 2006). Growth in the industry follows a cyclical pattern, with alternating revenue curves for hardware and software (Ulmer, 2004). Software spending, however, is still outpacing that for music and film (ESA, 2004b).
In 2005, the majority of console players purchased action games (30.1%), followed by sports (17.3%) and then racing (11.1%) (ESA, 2006a). Compelling content is one factor that drives the market (Altizer, 2004) so the industry is providing a range of products. Product lifecycles for video games are highly variable. The keys for publishers, who are responsible for their launch, are strong marketing and distribution networks, as well as hit titles (Williams, 2002). Marketing and production costs for games are now comparable to feature films (Adams, 2006), so licensed brands are growing in importance, because they have mass market appeal, and their easily recognisable titles modelled after successful franchises gives them greater sales potential (DFC Intelligence, 2004a; NPD Group, 2004). A strong convergence is becoming apparent between video games and other entertainment categories, with many titles based on blockbuster movies, books and pro sports (Paterson, 2003). Special music singles and remixes are also being released for game use (GIGnews, 2002); the MTV Music Awards now include a category for the best video game soundtrack.

1.3.3.3 The Game Players

A key driver for video games is the expanding demographic of players (GIGnews, 2002; Van Tassel, 2003), allowing the industry to achieve strong performance by delivering content that appeals to a broader audience (Paterson, 2003; Simon 2003). The increased maturity and diversity of this audience is demonstrated by the variety of available game titles and genres, as well as the rise in games rated ‘Mature’ (RocSearch, 2004). Video games represent one-third of the toy industry in the U.S (Paterson, 2003), but they are no longer a form of in-home entertainment just for children. It is estimated 112 million people aged 13 years or older participate in some form of electronic gaming (Shields, 2005), including 38% of women (ESA, 2006a). Approximately 50% to 60% of all Americans over the age of six now play (ESA, 2003), with an average age of 33 years (ESA, 2006a). Broadly, game players can be segmented into two groups: the hard core/avid gamers (estimated to make up around 15% of all gamers, McCandless, 2003) and the more casual users (Williams, 2002). In the U.S, 35% of the most frequent gamers are between 18 and 35 years (ESA, 2006b). This demographic represents a key marketing segment, as they are the largest spenders in the marketplace (Kotler, 2003).
Video games are transforming into a form of mass market entertainment, with usage increasing among individuals of different ages and socio-economic backgrounds (ESA, 2003). The penetration of consoles (estimated at 43%) is not as large as that for televisions, but around 45 million U.S households now have one or more game systems, up from 34 million in 1994 (Devaney, 2005; DFC Intelligence, 2004b). Within these, 44% of parents say they play with their children daily or weekly, while 60% play at least once a month (ESA, 2004a). Americans on average spent 64 hours each playing video games in 2002, almost double that of five years earlier (Delaney, 2004).

Increased usage is diverting consumer leisure time and dollars away from other entertainment options like television, movies and music (ESA, 2004c; Lewis, 2004; Mandese, 2004a). Males aged 18 to 34 years, for example, watched 7% less prime-time television in 2003 than in 2002 (Delaney, 2004), and 12% less in 2004 (Devaney, 2005). It is estimated they now spend 12 hours a week watching television, compared to 14 hours playing video games (Foege, 2005). In 2001, the most frequent gamers cited a number of reasons for playing: 81% played games because they are fun, they are challenging (72%), they are an interactive social experience that can be shared with family and friends (42%), and because games provide a lot of entertainment value for the money (36%) (ESA, 2004a).

Video game usage time is expected to continue to increase in coming years, with growth in consumption expected to outpace other forms of media (GIGnews, 2002). It has therefore been suggested that games are posing a serious threat (see, for example, Van Tassel, 2003). From a marketing standpoint, it is claimed they offer great promise as a communications medium (see, for example, Nelson, 2002). A number of developments are raising their profile for this purpose and making it easier for marketers to inject their brands.

1.3.4 Practitioner Claims and Activities Encouraging the Use of Placements in Games

A number of industry developments are expected to fuel the growth of game placements. First, game makers are now more receptive to these marketing messages, provided they enhance realism (Elkin, 2002; Snyder Bulik, 2004).
Publishers are taking a proactive approach to consider possible opportunities, in order to offset rising costs and provide higher quality content (Mack, 2004; Reid, 2004). Traditionally, they paid for the right to use brands, but the economic relationships have begun to change, with the majority now demanding payment (Delaney, 2004; Hein, 2004) or cross-marketing/co-promotional deals (Gunn, 2001; Richtel, 2002). This is still a cheaper alternative however to marketing communications using other media. Product placement in a video game can cost up to $100,000 for licensing fees (Lienert, 2004), while an advergame can cost less than $250,000, at least half the cost of an expensive television ad (Delaney, 2004). Online advergames can cost as little as $35,000 to $52,000 (Hyman, 2005), but with no media-distribution costs once the game is hosted on the web, the cost per thousand may be reduced to as little as $2 per person (Pereira, 2004), compared to $7-$30 for a television ad (Moore, 2006).

Further, to help marketers gain access to the medium, third-party brokers have emerged to negotiate deals (Delaney, 2004), ad agencies have created specialty game divisions (Mandese, 2004a), and independent placement firms have formed industry groups to highlight the practice (Curtis, 1996). A ratings system for video games, similar to television, is also being developed to enable marketers to place highly targeted brands more easily and efficiently (Delaney, 2004). Commercial enterprises such as Nielsen’s PlaceView, IAG and iTVX’s Media Bridge have begun to measure placements and assess their dollar value (Mandese, 2004b; Schmuckler, 2005). Largely however, brand awareness and exposure time measures are being used to gauge effectiveness. Publisher Activision and Nielsen Entertainment are incorporating ad-tracking technology into console-based games to calculate the number of people who see ads, how often they see them and their level of recall (Delaney and Guth, 2004; Rodgers, 2006). Through a deal with Sony, Nielsen is also capturing player demographics and usage data (called GamePlay Metrics), which will assist with segmentation and targeting activities (McCarthy, 2006; Pham, 2007). The difficulty though is that industry standards and formal measures have still not yet been developed.

Despite a lack of hard evidence, there is much speculation in the trade literature concerning the beneficial outcomes presented to advertisers. First, marketers are
being lured to games by the promise they can deliver a captive audience, thereby enabling them to gain exposure. Video games have the ability to attract and hold interest, so people can spend long and intense periods of time playing (Hamman, 2000). In fact, users may play a game an average of 40 hours before tiring of it (Hein, 2004). It has been claimed that with ads built in, consumers cannot avoid them by leaving the room or changing the channel, allowing for more messages to be delivered, which can be reinforced many times (Delaney, 2004). Also, since product messages are subtle, it has been suggested positive brand images and associations can be created (Mack, 2004) and brand awareness increased (Goff, 2004).

It is also speculated that games offer the potential to teach consumers about products, enhance the value of information, create virtual product experiences, and facilitate purchase decisions, thereby increasing sales (Fitzgerald, 2003; McChesney and Bellamy Foster, 2003; Reid, 2004). This stems from the assumption that players are more likely to notice and interact with brands, since games allow for their active participation (rather than passive observation as in the case of other media) (Mack, 2004). Creative and technological advances are also allowing developers to deliver more detailed and realistic environments, which is improving the appearance of products and creating more exciting consumer experiences (Lienert, 2004). In car racing games, 3D images and technical data from auto manufacturers are being used to build cars accurate to the paint colour (Lienert, 2004), with images mimicking those in real life almost precisely. In *Need for Speed Underground*, players can even view performance comparisons for vehicle accessories such as wheels, tyres, suspension and brakes. New levels of sophistication will be established in the next ten years and graphics quality will improve, as the technology and artistry of games continues (ESA, 2004c; Simon, 2003).

Already, games have become immersive and complex virtual worlds, which allow for not only the engagement of a player’s physical activity, but also their imagination, thoughts and feelings (Kane, 2004). Games involve sight, sound, touch and feel, and can influence emotions, giving players the ability to laugh at, talk about, and connect with them (Brown and Cairns, 2004; Sweetser and Johnson, 2004). Video games have been likened to art, because they can be a personal experience that excites emotions, with the potential to convey feelings and
experiences more strongly than other forms of media (Kap, 2004). It has been suggested this offers a unique opportunity for brands and products in this medium (Kap, 2004), and may foster ongoing brand relationships (Moore, 2006).

Some organisations experimenting with games as a marketing communications tool have reported success (Mack, 2004), particularly vehicle manufacturers. Daimler Chrysler attributes 14% of their orders for the Wrangler Rubicon four-wheel drive to their online game, downloaded by 250,000 people within six months (Delaney, 2004; Ferrazzi, Chen and Li, 2003). Subsequently, the company is doubling its video game related spending (Donaton, 2004). Others such as Mini, Aston Martin and Mitsubishi have reported an increase in brand awareness and showroom visitors as a result of their inclusion in Gran Turismo, which allows players to select, accessorise, tune and drive production cars under realistic conditions (Goff, 2004). Mitsubishi introduced the Lancer Evo in the U.S in response to pressure from players, and reports they now sell 500 a month (Lienert, 2004). Other Japanese manufacturers have set up game kiosks in their dealerships (Lienert, 2004) and are running games featuring their brands at trade shows (Goff, 2004).

Despite these seemingly positive results, many companies are struggling to assess the value of their placements (Kaplan, 2005), instead using subjective criteria for decision making (Karrh, 1995). Industry developments are presenting an apparent opportunity, but they are largely taking place in the absence of academic research into the use of brands in electronic gaming and little empirical evidence of the effects on game players (Kuhn, Love and Pope, 2004). Although there is much speculation in the practitioner literature, exactly what beneficial outcomes exist for marketers by engaging in the strategy remain largely unknown.

1.3.5 An Absence of Academic Research

The rapid growth of product placement has far outpaced research efforts in the field (Tiwsakul, Hackley and Szmigin, 2005). Only a small number of studies are evident in the literature, which have investigated the influence of product placement in games on consumer behaviour. The majority have investigated recall effects. The most prominent is Nelson’s (2002) study, which investigated the effects of console video game placements on brand awareness. The results showed that players are
able to recall brands both in the short- and long-term, even upon playing for the first time or for only a limited amount of time. Player attitudes toward product placement were also found to be positive, consistent with other investigations (see, for example, Hernandez et al., 2004a; Nelson, Keum and Yaros, 2004). These findings are supported by Schneider and Cornwell (2005) who demonstrated that prominent placements in particular can be recalled. Qualitative studies performed by Molesworth (2006) and Kuhn, Pope and Voges (2007) produced similar results.

Several other studies have explored online gaming (see, for example, Chaney, Lin and Chaney, 2004; Grigorovici and Constantin, 2004) and computer games (Nelson, Yaros and Keum, 2006; Yang et al., 2006). These investigations have shown placements to have a relatively weak influence on brand awareness. Two further studies have explored the influence of brands in games on gamer attitudes. In an investigation of the same console video game studied by Nelson, Bambauer (2006) found brand placements can positively change attitude toward the brand if the placement and game are evaluated positively. Mallinckrodt and Mizerski (2007), on the other hand, found no effect on attitudes for brands placed in a web-based advergame, though older children in their study did report a higher brand preference.

Literature concerning advergames is scant, and where it does exist, attention has been given to online games. In this context, business, government, self-regulatory and consumer advocacy groups have begun to assess the practice, with a view to addressing concerns over the use of such games by children, potential links with obesity levels and regulatory issues (see, for example, Harkin, 2005; National Advertising Review Council, 2005). However, there has been an over-reliance on anecdotal evidence, with very few systematic empirical analyses of this new model of communication. Aside from Moore (2006) who performed a content analysis of advergames on major food advertisers’ web sites, two other investigations have assessed their recall impact, producing mixed results (see, for example, Hernandez, Suh and Minor, 2005; Winkler and Buckner, 2006).

In a conceptual paper, Kuhn, Love and Pope (2004) argue that video game product placement must be placed on the research agenda. While the aforementioned studies offer insights, they possess methodological limitations, with many being exploratory
in nature (discussed in Chapter 2). There remains a lack of work in the marketing and consumer behaviour disciplines concerning console-based games and the influence of placements they feature. Further, this is true even in the context of traditional media. Finally, in relation to games, little is known about their characteristics nor their impact. Overall, all three of these areas have attracted insufficient academic attention. Product placement in games and traditional product placement are addressed in Chapter 2, where the background theory is presented, but it is necessary here to consider research performed in relation to video games and their cognitive impact. The topic of the current thesis is grounded in the parent disciplines of consumer behaviour and marketing communications, making this research relevant, as it provides an understanding, at least at some level, of games and their effects. A discussion of this research only reinforces the need for further academic study.

Some academic attention has been given in the social sciences to the impact of video games on gamers pertaining to three key areas: violence (for a review, see Gentile, 2005; Gentile and Stone, 2005), social development (see, Rauterberg, 2004), and learning (for a review, see Mitchell and Savill-Smith, 2004). These studies have largely been motivated by concerns over the influence of games on children, though the findings they have produced are inconsistent.

Video game violence is one area which has attracted particular attention. Concerns about violent content have increased, with suggestions the impact of games is intensified because of their active component (Chambers and Ascione, 1987), and more recently their heightened reality (Calvert and Tan, 1994). As one example, the Grand Theft Auto game has caused controversy due to its explicit content, where players can assault people, steal cars and obtain drugs (McLean, 2005). The well-being of children is a key issue, since they often gain access as a result of a ratings system which is commonly misunderstood, often not enforced, and inconsistent (Devine, 2004; Pereira, 2003). However, there is disagreement as to what should be done among government and public policy officials, parents, as well as game makers and civil libertarians who have claimed a right to free speech (Gahr, 1999). Adding to this debate is the fact that academic research has produced inconclusive evidence of the effects on players (for a complete discussion see Ferguson, 2007).
Some research has found children, adolescents and young adults tend to become desensitised to real violence (Carnagey, Anderson and Bushman, 2007) and more aggressive following exposure to violent video games (Anderson and Bushman, 2001; Anderson, Gentile and Buckley, 2007; Cooper and Mackie, 1986; Dominick, 1984; Griffiths, 1991; Schutte et al., 1988; Silvern and Williamson, 1987). Other studies, however, indicate this is not the case (Graybill et al., 1987; Winkel, Novak and Hopson, 1987). It is claimed that for most people, playing video games will not cause severe psychopathology or major adjustment problems (Gibb et al., 1983; Kestenbaum and Weinstein, 1985), but there is evidence of negative outcomes for subgroups of players. Ellis (1984), for example, found a positive relationship between video arcade involvement and deviant behaviour, but only for a minority of children whose involvement in arcades was associated with weak parental control. Funk and Buchman (1996) also found that spending more time playing video games was associated with lower self-esteem for adolescent girls. Overall, there is insufficient causal research to confirm the impact of playing violent video games, and inadequate research to identify high-risk players or game playing habits.

The impact of game play on social development is another topic which has received academic attention. In this area too, there is disagreement concerning effects. Some psychologists have expressed concern that video games can negatively impact the social skills of children, who may use games as a substitute for relationships and become socially isolated (Dominick, 1984). In the case of violent video games, some researchers have found children demonstrate less pro-social behaviour (see, for example, Chambers and Ascione, 1987), but others have shown games do not impact social introversion (see Kestenbaum and Weinstein, 1985). It has even been suggested that video game play is a positive social activity that can actually enhance social interaction, as well as motor, intellectual and affective development (Borland, 2003; Dominick, 1984; Gros, 2003; Snider, 2003a). Shimai, Masuda and Kishimoto (1990) found that video gamers performed better socially in some areas than did non-video gamers, while McClure and Mears (1984) showed that frequent players were more outgoing and less accomplishment-oriented than those who played less often. Contradicting these findings, however, Sakamoto (1994) found no relationship between video games and social behaviour. Therefore, findings are inconsistent and require further examination.
Finally, the impact of video games on learning has been explored. Gros (2003) suggests games can be used as learning tools, as they have the ability to reach, motivate and fully involve learners. It has been claimed that through play, students can develop abilities and strategies, as well as acquire digital literacy (Gros, 2003; Robertson and Good, 2005; Soloway, 1991). Some research has found video games can help teach perceptual and motor skills (Jones, 1981; Kennedy, 1981), as well as leadership (Comer, 2001). They can also alter visual attention processing (Bavelier and Green, 2003), promote inductive reasoning (CANSTATS, 2004), and facilitate observational learning (Funk and Buchman, 1996). For children in particular, they may have a more powerful influence than the classroom (Gee, 2003). There are some suggestions, however, that video games can have a negative impact on learning (Randel et al., 1992; Stoll, 1999). There is also little agreement in the literature as to the theoretical underpinnings of why games should be used, or how they should be designed to support learning (Garris, Ahlers and Driskell, 2002; Gredler, 1996).

In summary, apart from the aforementioned areas, games have largely been ignored in the academic literature, including in the marketing domain.

1.3.6 Conclusion
Developments in the marketplace are presenting an environment, which is both facilitating and encouraging the use of product placement, particularly in games. There is also much speculation in the trade literature concerning the potential benefits of the strategy. This too is encouraging marketers to engage in this new form of promotion, with the number of brand appearances expected to grow. However, there is an absence of research pertaining to the strategy and to games overall, specifically in terms of their impact on gamers.

A review of the industry presents a compelling argument that games are a topic worthy of study. Academics played an important role when previous media were introduced, in that they helped to understand the industry, bridged the gap between the public and the industry, and assisted with policy formation (Williams, 2002). It is necessary for marketing researchers to now validate whether the use of games as a promotional tool is indeed a viable strategy, as firms increasingly look to them as a marketing medium. This will be of benefit to those promoting product placement in
games, those engaging in the strategy, and the recipients of this marketing communication.

1.4 Methodology and Method

The following section introduces the research methodology and method for the current study. It outlines the purpose of the research and the research paradigm adopted, before presenting details of the research design. It concludes with an overview of the method applied.

1.4.1 Research Methodology: Justification for the Research Paradigm and Method

Broadly, social research is performed for three purposes: exploration, description or explanation (Neuman, 2006). Exploratory research is the most flexible and versatile, and is conducted to clarify ambiguous situations (Zikmund and Babin, 2007). Its purpose is to generate insight and comprehension (Hair, Bush and Ortinau, 2000), so it generally uses qualitative data collection techniques, where information is based on consumer qualities, not quantities. It does not employ formal research protocols and procedures, and rarely uses structured questionnaires, probability sampling techniques or large samples. As such, the data collected does not allow for quantification to a larger population, but it can be used as input to conclusive research designs.

Conclusive research is more structured and formal than exploratory research (Burns and Bush, 2000). Its primary purpose is to test pre-determined hypotheses and examine specific relationships (Malhotra et al., 2004). This type of research uses large, representative samples to collect data that can then be subject to quantitative analysis. Conclusive research can therefore be used as direct input to decision making and can also be easily replicated (Malhotra et al., 2004). There are two types: descriptive and causal research. Descriptive research is used when seeking to describe something, such as consumer or market characteristics. It aims to provide a deeper understanding of a particular issue, about which the researcher already possesses some prior knowledge. Common methods include panels, observation, and surveys, using cross-sectional or longitudinal designs. Explanatory, or causal
research, goes beyond mere description to identify the reason or cause of a particular phenomenon and under what conditions it occurs (Neuman, 2006). It is focused on examining relationships between different variables and inferring causality between them (Bryman, 2004), so that reasonable predictions can be made about marketing phenomena (Hair, Bush and Ortinau, 2000). Its main method is experimentation, which is used to gain evidence of cause-and-effect relationships.

It should be noted that the aforementioned generalisations of the differences between the research designs do not always hold true. For example, conclusive research designs are capable of collecting both quantitative and qualitative data. Further, qualitative research can aid not only in the development of hypotheses, scales or surveys for quantitative research, but also data analysis, as it can help clarify responses to a survey instrument. Descriptive research may also use not only qualitative techniques, but also experimental designs (this however is rare and such studies do not satisfy the conditions for causality) (Malhotra et al., 2004). Finally, causal studies may sometimes be administered by surveys and can be used not only to test hypotheses, but to create new ones as well.

The previous discussion also implies that qualitative and quantitative research are at two opposing ends on a continuum. This stems from traditional orientations to theory and research, or research paradigms. A research paradigm is a set of assumptions about the world, which provides a conceptual and philosophical framework for organised study (Kuhn, 1962), and helps determine appropriate methods to explore research problems (Bryman, 2004). It delineates preferences in types of research design, methodologies, instruments, types and forms of data collection and analysis. Two major schools of thought in the social sciences, positivism and interpretivism (or idealism as it is also known), provide the basis for the two different research approaches, quantitative and qualitative (Deshpande, 1983).

The positivist view of social science is synonymous with quantitative research. It combines deductive logic and empirical data to explain and predict human behaviour, but it gives little attention to an individual’s subjective state (Bogdan and Taylor, 1975). Positivist researchers are outcome-oriented and seek the facts or
causes of a social phenomenon by employing quantitative measurement, experimental design and multivariate, parametric statistical analysis. Interpretivism, on the other hand, is synonymous with the qualitative paradigm. It is concerned with understanding human behaviour from the frame of reference of the individual in a particular situation (Bogdan and Taylor, 1975). It therefore adopts a process-oriented, inductive approach to gain interpretations of social behaviour that accommodate context. This requires a less structured strategy, specifically the use of in-depth, open ended interviewing techniques, personal observation, holistic analysis and detailed descriptions (Patton, 1978).

Philosophers were once polarised on their views, arguing for one paradigm and subsequently one method in the conduct of research (Deshpande, 1983). This makes sense, as positivism is used for theory testing, while the interpretist approach aids in theory generation (Deshpande, 1983). However, there is now considerable support in the research methods literature for quantitative and qualitative techniques to be used together (see, for example, Bryman, 2004; Burns, 2000; Deshpande, 1983). Triangulation, or the process of using more than one method of investigation and therefore more than one type of data, allows for multidimensional insights to be gained into research problems (Bryman, 2004; Trumbo, 2004; Wimmer and Dominick, 2003). A combined approach provides the benefits of both quantitative and qualitative research, but also addresses the weaknesses of each.

For the current thesis, a triangulation of quantitative and qualitative methodologies was used to help understand whether product placement in games affects a consumer’s attitude to the brand and corporate image of the brand manufacturer. First and foremost, the research tends toward positivism, which has been the dominant philosophy employed in the marketing discipline (Peter, 1982). Answering the research questions and testing the hypotheses demanded a scientific, objective, quantitative research approach, consistent with a positivist paradigm. In particular, explanatory research was necessary to test relationships among the variables under investigation. The current research also sought to verify theories concerning product placement in traditional media, the formation of attitudes and corporate image from the advertising and sponsorship literature, and theories concerning medium characteristics and effects from internet/ interactive marketing
research. Such theory verification is important for the overall growth of a body of knowledge (Deshpande, 1983). At the same time however, the research sought to build new theory concerning product placement in games specifically. This meant that qualitative research methods were also needed, to seek out and understand the phenomenon.

Initially, exploratory research was performed, with a review of the literature (presented in Chapter 2). Research is not an isolated activity, but rather seeks to build on previous work, as well as provide new avenues for exploration (Hair, Bush and Ortinau, 2000). It was therefore necessary to gain familiarity with existing work concerning product placement and games, and to identify areas for further exploration. Relevant literature in the area of consumer behaviour was also examined. This process facilitated development of the research questions, aided in the identification of variables to be tested for study one, and led to the formation of hypotheses for study two. Further, a content analysis (although unsophisticated) was performed of games, to identify the way placements appear and the most popular products used for the strategy. This helped to determine the stimuli that should be used as part of the major quantitative aspect, the experiments. Finally, qualitative research was used as part of the experiments, whereby observations were recorded to help explain the findings. The research design is presented next.

1.4.2 Research Design

The current research seeks to establish a causal relationship between product placement in games (video games and advergames) and change in brand attitude, as well as corporate image. It also allows for the influence of several potential confounds. The nature of the research questions required measurement of consumer response, as well as comparison. A causal research design was therefore employed, specifically an experiment.

An experimental design offered the ability to test and compare consumer responses to the different treatments of product placement in games. Experiments generally involve random assignment of a sample of people to two or more groups, with one group then subjected to a treatment, or the condition of interest to the researcher (Zikmund and Babin, 2007). Responses of the groups are then measured and any
differences are attributed to the treatment, since the researcher controls for the effect of extraneous variables (other factors that could affect responses). The advantages of this technique are scientific rigour, the ability to control internal and external validity, and the ability to isolate the experimental variable, which allows for causality to be inferred (Christensen, 1997). Experimental research is the technique most closely aligned with the principles of scientific research, and the most common method used for inferring causal relationships. This is because only experiments satisfy the three conditions required for causality: timing (the researcher can manipulate timing to ensure the cause occurs before the effect), association (the researcher can ensure two variables occur together in a patterned way), and the absence of alternative explanations (the researcher can eliminate other causal factors) (Malhotra et al., 2004; Neuman, 2006). The main criticism of experiments, particularly laboratory experiments, is their artificial nature.

There are two broad types of experiments: those conducted in the field and those performed in a laboratory. Unlike field experiments, which are conducted in actual market conditions, laboratory experiments are performed in an artificial setting where the researcher constructs the desired conditions. The two techniques offer advantages and disadvantages, but differ with regards to one key factor, that of validity. Validity refers to the extent to which conclusions drawn from an experiment are true, including whether the causal relationships are accurately identified (internal validity) and whether they can be projected to a larger population (external validity) (Hair, Bush and Ortinau, 2000). Field experiments lend themselves to high external validity but low internal validity, while laboratory experiments produce the opposite. Both are therefore employed in this research.

Experimental designs can be categorised as pre-experimental, quasi-experimental, or true experimental (Hair, Bush and Ortinau, 2000). The main difference between these types is the degree of control the researcher can exercise, in terms of research design and execution. Pre-experimental designs are characterised by an absence of randomisation procedures to control for extraneous factors, hence their major weakness is a lack of internal validity (Kerlinger, 1986). Quasi-experimental designs are appropriate when the researcher is unable to achieve equal experimental or control groups based on randomisation, but can control other variables (Neuman,
Finally, true experimental designs ensure equivalence between experimental and control groups, as the researcher randomly assigns test units and treatments (Malhotra et al., 2004). A true experimental design was selected for this research, due to its ability to provide higher internal validity. A post-test-only, control group design was employed.

A post-test-only, control group design requires test subjects to be randomly assigned to either experimental or control groups. The experimental group is then exposed to the independent treatment, following which both groups receive a post-treatment measure of the dependent variable (Hair, Bush and Ortinau, 2000). Measurements were taken for this research using a quantitative survey method; consumer response to product placement in games is quantified, as indicated by attitude change toward the brand and its manufacturer. Surveys are sensitive to small group differences and can reveal otherwise unnoticed patterns and information (Hair, Bush and Ortinau, 2000). This was particularly important for the research at hand. Further, they are economical, simple to administer and allow the researcher to collect large amounts of quantifiable data more quickly and easily. Although surveys can be inflexible and superficial given their need to standardise responses (Babbie, 2004), standardisation was necessary for the current research, due to the importance of internal validity.

Survey data can be collected in a number of ways using person, telephone, or self-administered techniques, as well as computer-assisted methods. For the current research, the presence of respondents and the researcher was necessary to perform the experiments, which eliminated the use of telephone or internet surveys. A person-administered method, which requires an interviewer to ask questions and record answers, was also not used. The need for probing questions was non-existent, time was prohibitive, and the potential for social desirability bias was too high (Hair, Bush and Ortinau, 2000). Instead, a self-administered questionnaire was distributed to respondents where the experiments took place and/or where they were recruited. This method offers several advantages including reduced cost, higher response rate and increased control over the environment. The risk of response bias and errors, which can compromise the validity of research findings, is also decreased, because interviewer influence is minimised and respondents can answer at their own pace (Malhotra et al., 2004). Disadvantages include a lack of control over the order in
which questions are answered and the completeness of responses (Burns and Bush, 2000). The presence of a researcher during survey completion, however, allows for clarification to be sought regarding instructions and questions.

There are no scientific approaches that will guarantee optimal survey design, but guidelines offered in the literature were used to develop an appropriate instrument for this research. For self-administered questionnaires, the literature suggests that question design and wording are particularly important to reduce response error, as is question format (Bradburn, Sudman and Wansink, 2004). Difficult and inappropriate language, negative phrasing and ambiguous words should be avoided, along with double-barrelled and leading questions (Fink, 2006). Only relevant, specific questions should be included, preferably in a closed format with specified response options (de Vaus, 2002; Fowler, 2002). A logical order is another important factor to limit the potential for bias and order effects (Malhotra et al., 2004). Opening questions should be non-threatening to gain the cooperation of respondents, and increase in difficulty so as to prevent fatigue. Instructions and survey format (including length, spacing and the appearance of text) also play an important role in maximising the accuracy of information and completion rates (Hair, Bush and Ortinau, 2000). These should assist the respondent to move through the survey. Thanking respondents for their time and effort is also key. Finally, pre-testing the survey instrument is recommended to gauge the time required for completion, and to identify potential problems (Bradburn, Sudman and Wansink, 2004; Fink, 2006; Fowler, 2002).

Given the challenges of developing an effective survey, the instrument used to collect information for the current research was designed using pre-existing scales. Adapting questions successfully employed in other surveys is advocated to enhance instrument validity (Bradburn, Sudman and Wansink, 2004; Fink, 2006; Fowler, 2002). The questions, however, were phrased with consideration given to respondent characteristics in order to minimise response error, including inaccurate and nonresponses. The specific survey design considerations for this research are described as part of the method sections for both studies one and two, at section 3.3.4 and 4.3.4 respectively. An overview of the research method follows here.
1.4.3 Overview of Research Method

The current research comprises two studies. Study one represents a pilot investigation, which explores the effects of use simulated and peripheral placements in video games on players’ and observers’ attitudinal responses, including their attitude to the brand and corporate image. Further, it examines whether responses are influenced by an individual’s involvement with the product category, and a game player’s skill level. To test these relationships, a laboratory experiment was conducted with a small sample of respondents (n=60), drawn from an Australian east-coast university. The sample included not only students, but also academics, other staff, university guests, and any colleagues, friends or family who were on campus at the time of the research. These adult subjects were randomly selected and then assigned to either one of two treatment groups, or a control group. The two treatment groups were exposed through play or observation to a console video game stimulus featuring brand and product placements.

The purpose of study one was to gain preliminary insights that would aid in the development of hypotheses. These were then tested in study two. The main study investigates the effects of brand and product placements in a handheld video game and advergame on players’ attitude to the brand and corporate image of the brand manufacturer. It also explores the impact of involvement with the product category, a player’s skill level in the game (driving skill), skill level in relation to the medium (game skill), and perceived interactivity. To address the limitations of the pilot, a field experiment was performed with a large, random sample of student respondents (n=350) from two university campuses. They were assigned to three groups: video game, advergame or control. Responses to product placement were then measured and compared.

Data were collected from all groups using a self-administered survey, which was developed by adapting existing scales to measure the constructs of interest. Variations of the survey instrument were developed for each of the studies and groups. The data were analysed using univariate techniques, including analysis of variance (ANOVA) and analysis of covariance (ANCOVA), to identify differences in responses between the groups.
A complete discussion of the research method for both studies is presented in Chapters 3 and 4. That discussion illustrates that study two is largely a replication of the pilot. The purpose of a pilot study is to guide larger scale studies, check procedures, refine measures, validate manipulations of experimental variables and identify potential confounding variables (Zikmund and Babin, 2007). It is therefore critical that testing be conducted with the same procedures, instruments, subjects and so on, as the main experiment (Perdue and Summers, 1986). This is particularly important where there is little existing literature to guide the research activity. Study two presented in the current thesis therefore closely mirrors the pilot, sharing similarities with regards to research design, the game stimuli, variables, sample and survey instruments. The research maintains a narrow focus, thereby allowing for strong evidence to be gained concerning the effects of game placements, and for a strong contribution to be made to what is still an emerging area.

1.5 Key Findings and Contribution of the Research
The findings of studies one and two are presented at sections 3.4 and 4.4 respectively. The results of study two echo those of the first investigation. Combined, these results indicate that neither brand nor product placements in a video game or advergame affect consumers’ brand attitudes or corporate image of the brand manufacturer, even when controlling for their involvement in a placement’s product category or skill level. A weak effect is evident when controlling for interactivity, whereby the more interactive a player perceives the game to be, the higher their attitude to a placed brand and corporate image.

The research makes several contributions to the developing body of literature concerning electronic games. First, the research addresses a current need for information concerning the strategy, which makes it relevant in both the academic and business domains. It is the first study to investigate the attitudinal responses of gamers to brand and product placements in a video game and advergame context, and only the fourth study to investigate product placement in console games overall. Furthermore, the research contributes to not only the understanding of product placement in games’ effects, but also to the strategy itself, through enhanced understanding of product placement dimensions, and the introduction of two new
terms to more accurately capture the nature of these messages in the game medium (peripheral and use simulated placements). A thorough review of the game stimuli used in the research demonstrates the ways these placements may be used.

As part of the current investigation, a number of concepts have been explored, thereby allowing for contributions to be made in several separate areas, aside from the broader theme of product placement in games. Separately, the research makes a contribution in the marketing communications domain in relation to product placement and in the area of consumer behaviour pertaining to theories concerning attitude formation. It presents a new definition of product placement and positions the strategy in relation to games within the existing marketing communications framework. The study also makes a contribution concerning electronic games, providing details of their characteristics and the industry. Finally, the thesis presents a detailed discussion concerning the methodology and implications for research, to provide structure and direction for future studies.

Aside from its theoretical implications for the marketing communications and consumer behaviour disciplines, the research has significant managerial implications. The results suggest marketers must carefully consider the use of a product placement in games strategy when seeking to achieve attitudinal objectives. If the objective is to increase brand awareness then, based on other studies, consideration of product placement in games may be warranted. The existence of recall effects is confirmed by the current research, though further work is required to validate this outcome. If the marketer seeks to impact brand attitudes or enhance the organisation’s image, other forms of promotion should be considered, or, research conducted to determine any effects in the context of the product/brand/organisation and the specific game. The current investigation does not draw a conclusion as to the strategy’s overall value, because further research is required to build on the study’s findings and address its limitations. This research does however illustrate that to presume the effects of product placement in a game medium will mirror those for traditional media is misguided, and should not form the basis for action. A detailed explanation for the results is presented in Chapter 5, along with a more complete discussion of the research implications and suggestions for future investigations.
1.6 Delimitations

The delimitations of a research study indicate what the study will include and what it will not or, in other words, its parameters (Punch, 2005). The scope of the current study is limited by a number of factors.

First, the scope of this thesis is limited by the game platform selected for investigation. Broadly, games can be divided into five categories: console/handheld, PC, online, wireless and arcade. Leading industry bodies such as the Entertainment Software Association and PricewaterhouseCoopers define the games market as being made up of these groupings. It is becoming increasingly difficult, however, to distinguish between the game formats, because convergence is apparent (for example, the new consoles allow for online and computer game play, and past console games can now be played on mobiles). Nevertheless, the nature of the games, the way they are played, and the types of gamers differ across the platforms. Online game play, for example, is markedly different from that for consoles, offering the key advantages of multiplayer gaming and online communities. It is for this reason that the current study is narrow in its focus.

The focus of this research is on consoles, including handhelds. Even in the case of advergames, which are often played on the web, attention is given to console-based versions for the purpose of easy cross-comparison. As a result, viral marketing aspects are not considered (a characteristic of online advergames), nor are virtual communities. There are several reasons for this selection. First, consoles remain the dominant platform for game play (Taub, 2004). Computer game sales continue to be surpassed by those for video games and are expected to decline with the release of the next generation consoles; over 38 million units were sold in the U.S in 2005, compared to 190 million for video games (ESA, 2006a). It is predicted that spending for online and wireless games will increase, but these should remain much smaller categories (Hartig, 2006). Second, the video games industry is more structured and stable, with marketing in console games also far more advanced than in other platforms (Williams, 2002). Finally, the concentration on consoles provided methodological advantages, namely the ability to control subjects and the environment as part of the experiments (discussed in Chapters 3 and 4).
The current study examines consumer responses to product placement in one video game for the Microsoft Xbox platform, and two games for the Sony PlayStation Portable, all from the car racing genre. Further, it investigates only a few product categories and several brands. As a result, it may not be feasible to extend the conclusions to other platforms, games, or products. Also, the study does not measure responses to all types of placements, such as verbal brand mentions or music soundtracks. The focus is on visual brands (which appear peripherally), and use simulated products (which are plot integrated). These are distinguished as ‘brand’ and ‘product’ placements in the current thesis, though the term ‘product placement in games’ is used to describe the promotional strategy itself. Other terms are used in the literature (such as branded entertainment, or its sub-category advertainment), but product placement is most common, particularly in the academic domain. Finally, of interest for the current research is products and brands injected into video games developed by games publishers, as well as brand-centred advergames commissioned by organisations. Therefore, the focus is on product placement as a strategy, used by marketers to influence audiences for commercial benefit. While barter arrangements and gratis placements still exist, today pre-arranged, paid placements are more widespread.

In this thesis, product placement is treated as a proactive marketing strategy, but consideration is not given to promotional tie-ins with the games investigated. Often, product placement is part of an integrated campaign, where the firm seeks to capitalise on its inclusion in an entertainment property with the use of supporting promotion. Ray-Ban, for example, used point-of-sale displays and advertisements featuring Will Smith to reinforce its placement in *Men in Black* (D’Orio, 1999). Also, a firm may create branded content to illustrate its tie-in. Take for example M&Ms, which created a *Light Saber Training* game on its ‘Chocolate Mpire’ web site to highlight its partnership with the *Star Wars* film (Moore, 2006). This game featured M&Ms product placement and was supported with e-card and screensaver downloads featuring M&Ms characters, television commercials, and sweepstakes. When marketing communications are integrated, brand messages are more likely to be persuasive and better recalled (Naik and Raman, 2003; Schultz and Schultz, 2004). The focus of the current research, however, is on product placement specifically, which is examined in isolation.
Apart from stimulus factors, other steps were taken which reduced the scope of the current research. This thesis does not discuss in detail the legal environment and public policy issues surrounding the practice of product placement, nor does it consider the entire category of branded entertainment. The scope is further reduced as a consequence of budget and time constraints, which had an impact on the experimental design, its execution and sample selection. The use of a sample drawn from one university in Brisbane, Australia will limit the generalisability of the findings to some extent. Further, this is a cross-sectional, as opposed to a longitudinal study.

Finally, since it is one of the largest video game markets in the world (Hartig, 2006), and one where the product placement industry is particularly sophisticated (Devanathan et al., 2003), much information has been drawn from the United States, with monetary figures also reported in U.S dollars. Unfortunately, comprehensive statistics concerning the Australian market are lacking (APH, 2004). The sales rates, growth in consumption and penetration of game consoles being exhibited in other parts of the world, however, are indicative of the trends being seen in Australia (IEAA, 2007). Although the electronic games market is small in sales volume compared to other markets such as the U.S, Australia has one of the highest per capita consumptions of entertainment products (hardware and software) (GDAA, 2006). The demographic characteristics of Australian gamers also mirror those of American players, as do the reasons for game play (IEAA, 2007).

1.7 Conclusion and Outline of the Thesis

This chapter has provided an introduction to product placement in games. Further, it presented the research question and hypotheses central to the thesis. The current study seeks to satisfy a need for empirical research to investigate the effects on consumers of brand and product placements in games (specifically in terms of brand attitudes and corporate image effects). This is justified owing to a number of factors. The methodology used in pursuing answers to the research question, and the findings generated as a result, were also outlined in this chapter, along with the delimitations.
Chapter 2 provides the theoretical foundations of the research study. It begins with a review of the background theory pertaining to the two parent disciplines of marketing communications and consumer behaviour, before positioning product placement in games within the existing communications framework. An overview of product placement is then provided, proceeding from a definition of the strategy and theoretical constructs involved in its use, to a discussion concerning its growth and controversy surrounding the strategy. The extant literature and research exploring the impact on consumers of product placement in traditional media is next presented, followed by a review of the limited earlier research into game placements. The multi-dimensional nature of games and their characteristics are examined, before the chapter concludes with an introduction to the focal theory.

The literature review leads to the identification of a research question, which is presented in Chapter 3. Drawing on research from the marketing communications and consumer behaviour disciplines, a thorough review of the focal theory is performed in the pursuit of understanding how product placement in games might operate. The two key constructs of brand attitudes and corporate image are a focus, with a detailed examination of the processes involved in attitude formation. Through review of both empirical and theoretical work in this area, a number of predictions relating to the research question are developed and then tested as part of a pilot study. Chapter 3 is dedicated to discussion of this first investigation, presenting details of the method employed, including the research design, treatment of variables, sample selection, survey instrument and its administration. An introduction to the analysis of variance and analysis of covariance statistical techniques is also provided, along with justification for their use. The results of the data analysis are next outlined, followed by a discussion of the findings. A key outcome is the development of a number of hypotheses.

Chapter 4 presents details of the main study, conducted to test the hypotheses. The experiment for the pilot investigation was performed in a laboratory setting, whereby a sample of respondents drawn from within a university community engaged in playing or observing a video game and then responding to a questionnaire. The study satisfies the requirements for internal validity, which was paramount, but it is prone to being externally invalid. To address this limitation, a field experiment was
conducted for study two, which involved a sample of students who played either a handheld video game or advergame. This represents a partial replication of the pilot. The research method is described in Chapter 4, along with the results of the hypothesis testing. This culminates into discussion and explanation of the research findings.

The thesis concludes with Chapter 5, where overall conclusions and their implications are presented. Explanation for the lack of support for the hypotheses is provided, which leads to a summary regarding the potential for product placement in games to achieve brand attitude and corporate image objectives. The contributions of the research are many and are articulated in this chapter. The findings also have important implications for theory and practicing marketers, which are discussed. Finally, the limitations of the study are identified and suggestions for future research proposed.
2.0 LITERATURE REVIEW

2.1 Introduction

Chapter 1 presented the background and justification for the current study. That review demonstrates the growth of the video games industry. Given such a level of penetration of the market, and access to such a diverse audience, it is not surprising that the potential of games as a marketing communications medium has begun to be exploited. Primarily, this has occurred through the use of product placement, the subject of this thesis.

For the most part, product placement is now a planned communications strategy, which is employed to achieve key consumer behaviour outcomes. This indicates that an exploration of product placement and its effects will therefore rely on the study of two parent disciplines, the first being marketing communication and the second, consumer behaviour. This chapter proceeds from an overview of these disciplines and key promotional objectives, to then introduce video game product placement as a form of marketing communications. A definition of product placement is presented, before examining the theoretical constructs involved in its use, its growth and controversy surrounding the strategy. The limited earlier research into product placement in traditional media and in games is then presented, which leads to the identification of theoretical models that will aid in gaining a deeper understanding of its influence. The discussion, which draws from literature in the related disciplines of advertising, sponsorship and interactive marketing is extended in Chapter 3 to make predictions concerning the strategy’s attitudinal impact. The framework for the literature review is outlined at Figure 2.1
2.2 Marketing Communications and Consumer Behaviour

Overview

Promotion, or marketing communications as it is more commonly known, is a critical aspect of an organisation’s overall marketing mission and a major determinant of its success. In the current environment, this element of the marketing mix has become increasingly important in the attainment of a firm’s financial and non-financial goals (Schultz, Tannenbaum and Lauterborn, 1994). It has become so important in fact, that there has been a shift to a more integrated approach to communications in order to achieve clarity, consistency and maximum impact (Belch and Belch, 2001: p453).
Marketing communications is formally defined as ‘the collection of all elements in an organisation’s promotional mix that facilitates exchanges by establishing shared meaning with the organisation’s customers’ (Shimp, 2000: p3). It therefore refers to the communication that occurs between an organisation and its customers for the purpose of highlighting the benefits and characteristics of a product or brand, and ultimately stimulating a purchase. As implied, there are a number of tools available to marketers to facilitate this communication. Exactly what these tools are is defined differently in the literature depending on the author, but according to Belch and Belch (2001) they include advertising, direct marketing, sales promotion, publicity/public relations, personal selling and interactive/internet marketing. Each of these six strategies possesses strengths and weaknesses, with the use of each appropriate under different conditions, but essentially all types of marketing communications seek to influence consumer behaviour.

Consumer behaviour is a discipline concerned with the decision-making processes and actions of individuals as they allocate resources in obtaining, consuming and disposing of products and services intended to satisfy their needs (Blackwell, Miniard and Engel, 2001; Schiffman and Kanuk, 1991). Its foundations lie in the discipline of psychology, but it also draws from economics, sociology and other behavioural sciences (Grunert, 1988). The discipline has evolved over the past forty years with the advent of a growing body of consumer research. Consumer behaviour is now commonly recognised as being of premiere importance in developing effective strategies to influence consumers (see, for example, Blackwell, Miniard and Engel, 2001).

There are three key consumer behaviour objectives marketing communications strategies may satisfy. Apart from encouraging a purchase, which is generally the ultimate goal, the role of marketing communications is also to create brand awareness and generate favourable attitudes (Rossiter and Percy, 1997). These three components can be seen as existing on a continuum, whereby a marketer seeks to move consumers from a state of awareness of a product, to a positive predisposition towards it and in turn a purchase (Belch and Belch, 2001). Various models have been proposed that signify these relationships, some of which include other related elements. Perhaps the most prominent is the hierarchy of effects model (Lavidge
and Steiner, 1961), which classifies message outcomes into three broad categories (cognition, affect and conation) that correspond to a consumer’s mental stages of awareness/understanding, interest/liking and purchase intention/behaviour. Other models such as AIDA (awareness-interest-desire-action) and ATR (awareness-trial-reinforcement) reflect similar constructs, and suggest that consumers logically progress through these linear and sequential stages (for a complete review see Barry, 1987; Barry and Howard, 1990). Each of these marketing communications objectives is discussed in turn.

2.2.1 Brand Awareness
Brand awareness is defined as a consumer’s ability to recall and recognise a brand, as reflected by their ability to identify it under different conditions (Keller, 2003). It is a function of the attention a viewer pays to an advertisement (Aaker, 1996) and involves linking the brand to certain associations in memory (Keller, 2003). There are three ways individuals have control over the information acquisition process; a viewer may select to pay no, some or full attention to an advertisement, and it is this degree of attention which has a cognitive impact in terms of brand awareness (Mitchell, 1983).

Alternative theoretical explanations are presented in the literature concerning the awareness process, but it is generally held that it occurs as a result of a complex relationship between one’s sensory, short-term and long-term memory, and the way information is stored. Essentially, incoming information (perhaps in the form of an ad message) travels via the sensory memory to the short-term (or working) memory, and from here that salient information is passed to the long-term memory (Johnstone and Dodd, 2000). This is then stored via connections between new and existing memories in different parts of the brain, attached by a series of nodes (Keller, 1993). Some memories are easier to access than others, largely depending on temporal factors. For example, the more recent the exposure to some form of information, the greater the chance of its recall from short-term memory. It is this activation of the brand in memory that is commonly termed ‘brand salience’ (Keller, 2001; Miller and Berry, 1998).
Awareness varies on a continuum of memory-based processes from recognition to recall (Rossiter and Percy, 1983). Brand recall is elicited when a consumer is able to retrieve a brand from memory without any reminders or cues, as opposed to being able to identify it when presented in a list (recognition) (Chitty, Barker and Shimp, 2005). It therefore reflects a deeper form of awareness than recognition. Both recall and recognition represent explicit memory measures, while implicit memory refers to a situation where consumers do not use conscious memory retrieval - this occurs automatically (Duke and Carlson, 1993; Krishnan and Chakravarti, 1999).

2.2.2 Brand Attitude
Attitudes are a focal point of a great deal of marketing strategy. The term attitude is defined as a general and enduring positive or negative evaluative judgment of, or feeling toward, an object, such as a brand (Shimp, 2000). As suggested by this definition, they feature two components: a cognitive and affective component. In addition, a third one, conative, has been proposed (Lutz, 1977). In the context of consumer behaviour, the conative component represents an individual’s behavioural tendency, or predisposition to act, towards an object (Chitty, Barker and Shimp, 2005): in other words, their purchase intention or behaviour. It is generally held, and has been demonstrated, that attitudes influence behaviour (see, for example, Allen, Machleit and Schultz, 1992; Keller, 2003; O’Keefe, 1990), therefore this is treated as a separate construct and discussed below.

The cognitive component of a brand attitude refers to an individual’s beliefs about a brand including their knowledge and thoughts, while the affective component refers to an individual’s feelings. These two combined give consumers an overall evaluation of a brand, which forms the basis for action with respect to it (Keller, 2003). For most product categories, this evaluation must be positive for an individual to consider making a purchase (Rossiter and Percy, 1997). This occurs because brand attitude represents a brand association, which influences a person to respond to an object (such as a brand) in a consistent way (Chitty, Barker and Shimp, 2005). Another type of brand association is corporate image (Keller, 1993), which is now discussed.
2.2.2.1 Corporate Image

Corporate image represents a natural extension of the discussion concerning brand attitudes. Corporate image has been defined as ‘the total impression that (an) entity makes on the minds of individuals’ (Dichter, 1985: p75), and ‘the image associated with the name of an organisation’ (Gatewood, Gowan and Lautenschlager, 1993: p416). Keller (2003) defines it as:

… the associations that consumers have in memory to the company or corporation making the product or providing the service as a whole (p538).

The aforementioned definitions imply a similarity between corporate image and reputation, and therefore indicate that a prolonged time period is required for image development. While this has been argued (Herbig and Milewicz, 1993), others have claimed mere exposure to information is central to an individual’s image perceptions and therefore only a short time period is required (see, for example, Gatewood, Gowan and Lautenschlager, 1993).

Corporate image is an important concept, because like brand attitudes it can influence purchase intention and behaviour (Demworth, 1989; Economist, 1998; Lafferty and Goldsmith, 1999; Pope and Voges, 2000). It is in fact a similar construct to brand attitude, but refers to an individual’s attitude toward an organisational brand rather than a product (Keller, 2003), and therefore encompasses a much wider range of associations. These associations, however, can be broadly defined as those relating to performance attributes or benefits and those relating to feelings (the cognitive and affective components of attitude) (Keller, 2003). As in the case of attitudes, which are affected by a number of factors, corporate image is also formed from a combination of factors relating to the company (including its marketing communications) and the individual (Barich and Kotler, 1991; Dowling, 1988).

2.2.3 Purchase Intention/ Behaviour

Purchase intention refers to a buyer’s self-instruction to purchase (a brand, for example) or take some other purchase-related action (Rossiter and Percy, 1997). The distinction between purchase intention and behaviour is that, intention represents a subjective judgment about how one will behave in the future (for example, what an
individual thinks they will purchase), as opposed to the actual behaviour itself, or purchase (Blackwell, Miniard and Engel, 2001). As implied, there is often a time delay between the two.

The best predictor of a consumer’s purchase behaviour with respect to a brand is his or her intention to purchase that brand (this is the theory of reasoned action, see, for example, Ajzen and Fishbein, 1980). The ability to influence purchase intention is therefore a critical objective for marketing communications, as it represents the planning of the final consumer response, behaviour (Rossiter and Percy, 1997). This is the final step where all other message outcomes culminate to produce action: the ultimate promotional objective.

2.3 Product Placement in Games as a Form of Marketing Communications

Product placement, which represents the central issue of this thesis, falls within the domain of marketing communications. As a relatively new, nontraditional means of promoting products and brands however, it is not recognised as an independent promotional tool. In considering product placement’s classification within the existing marketing communications framework, it is evident the strategy shares similarities with other promotional forms. Specifically, comparisons can be drawn between product placement and advertising, as well as sponsorship. In the case of game placements, comparisons can also be drawn with interactive/ internet marketing due to the distinguishing characteristics of the two media.

First, like advertising, product placement is a nonpersonal communication by, what is usually, an identified sponsor. It is also a message delivered via mass media such as television, as well as movies and games, which have been considered forms of mass media in the context of product placement (see, for example, Avery and Ferraro, 2000; Williams, 2002). Advertising is the best known, most widely discussed and most frequently used form of promotion. Although its effectiveness is being questioned (as highlighted in Chapter 1), it has been an influential force in marketing history. Advertising has even been credited with having ‘pioneered marketing research and much of modern marketing’ (Stewart, 1992: p2). It is a
promotional strategy generally recognised as being able to achieve a number of communications objectives, including the creation of positive brand attitudes and a positive image for an organisation (Belch and Belch, 2001). In fact, marketing theory in these areas has evolved as a result of a great many investigations of advertising and its effects.

The multidimensional nature of product placement however means it does not fit neatly within the advertising category. Belch and Belch (2001) and Shimp (2000) classify product placement as a type of advertising which uses ‘support’ or ‘alternative’ media such as movies, but present a discussion of the strategy in the same context as Yellow Pages, video and in-flight advertising. The industry overview presented in Chapter 1 and the discussion of product placement later in this chapter indicates that, within the broader context of marketing communications, this is providing insufficient credit to what has become a popular form of promotion. Further, classifying product placement as a form of advertising is problematic, as it possesses several characteristics which contradict the advertising definition (discussed at section 2.4.1). This prompted the creation of a new definition for the current research.

To gain a holistic view of product placement, it is useful to consider where else this form of promotion might fit in the communications framework. As previously highlighted, product placement in games can replicate the sponsorship which appears at real events and sporting matches. In the context of games where billboards of sponsors can appear, it is therefore necessary to consider the promotional mix element, public relations.

Public relations is a communications strategy designed to generate goodwill, with its main purpose being to establish and maintain a positive image for an organisation among its various publics (Shimp, 2000). There are a variety of public relations tools available to marketers, one of which is sponsorship (Clow and Baack, 2002; Semenik, 2002), defined as:

… the provision of resources (e.g. money, people, equipment) by an organisation (the sponsor) directly to an individual, authority or body (the sponsee) to enable the latter to pursue some activity in return for benefits
contemplated in terms of the sponsor’s promotion strategy, and which can be expressed in terms of corporate, marketing or media objectives (Pope and Turco, 2001: p128).

Sponsorship involves an exchange between a sponsor and a sponsee whereby in return for a fee, an organisation obtains the right to associate itself with a particular activity (such as a sporting event) and to market this association (Cornwell and Maignan, 1998). By doing so, a sponsor seeks to enhance consumer perceptions of a brand and generate a positive image for the organisation (Erdogan and Kitchen, 1998; for a complete discussion of sponsorship effects see Cornwell and Maignan 1998; Meenaghan 2001). Based on the discussion of product placement presented in Chapter 1, one can see that it operates in a slightly different way and that the economic relationships between the sponsor (an organisation) and a sponsee (such as a game maker) do not function the same. Product placement can sometimes ‘replicate’ sponsorship; it is not truly sponsorship. Nevertheless, the two share some similarities.

One key issue is that both strategies are designed to influence consumers unobtrusively. As with product placement, research has revealed that consumers perceive sponsorship as a more subtle form of persuasion (Meenaghan, 2001). Advertising is viewed as a self-serving, coercive and even forceful activity, which generates a heightened state of alertness and can therefore raise consumer defences (Meenaghan, 2001). Sponsorship however, like product placement, is more subtle.

The fact that product placement can occur in games also highlights the potential fit with another category: interactive/ internet marketing. Interactive/ internet marketing is a relatively new addition to the promotional mix. Traditionally, advertising, sales promotion, publicity/ public relations and personal selling made up this mix, but with advances in technology and the growth of interactive media such as the internet, interactive/ internet marketing is considered by some a promotional element in its own right (see, for example, Belch and Belch, 2001). This form of marketing communication involves the use of interactive media for delivering marketing messages. In fact, these media can be used to execute all elements of the
promotional mix (for example, advertising, public relations and so on can be performed on the internet). Interactive media are those that:

… allow for a back-and-forth flow of information whereby users can participate in and modify the form and content of the information they receive in real time (Belch and Belch, 2001: p19).

Unlike traditional forms of communication such as advertising, which are passive and one-way in nature, these media provide users greater control, allowing them to receive and alter information and images. In other words, a consumer can interact with and act on the medium. This interactivity is one key characteristic that distinguishes games (along with internet) from traditional media. The difference lies in the fact that, while the internet facilitates many-to-many communication, video games (as opposed to online games) are based on the traditional model of mass communication following a process of ‘one-to-many’. Using a strategy of product placement organisations transmit content through a video game, but no interaction occurs between consumers and the organisation, only between consumers and the medium. This characteristic, as well as others that distinguish video games from other media, are discussed in further detail at section 2.6.2.

2.3.1 Summary
Product placement is a promotional tool that is used like other forms of promotion to influence consumers. The application of consumer behaviour theory for the current research, which seeks to understand the influence of product placement in games as a form of marketing communication, is therefore justified. However, product placement is an alternative communications strategy, which to date has not been fully developed conceptually in the literature and has attracted only minimal research attention, particularly in the context of electronic games.

The purpose of the current study is to understand more completely the relationship between game placements and attitudes (brand attitude and corporate image). To do so, it is necessary to position video game product placement in some context. This has been done by exploring the similarities of the strategy with other forms of promotion, and the similarities of games with other media. An absence of research regarding product placement and audience effects as highlighted in Chapter 1
necessitates such a comparison, in order for predictions to be made concerning consumer response outcomes.

The previous discussion highlights that the advertising literature provides a basis for understanding attitudinal effects which may stem from placements in games. Further, a great deal of sponsorship research has investigated the corporate image construct and is therefore relevant in understanding the influence of game placements on this response. Finally, the characteristics games share with the internet means the interactive marketing literature is applicable. The following section presents an overview of product placement before examining existing research concerning its effects.

2.4 Product Placement Overview

2.4.1 Product Placement Defined
Product placement, also referred to as brand placement, is an emerging form of marketing communication which to date remains little understood. Few definitions are offered in the literature as to what constitutes this strategy, and where definitions have been attempted, often they neglect some fundamental elements of the practice. In many instances, product placement is referred to as a form of advertising. Belch and Belch (2001, pGL10), for example, describe it as ‘a form of advertising and promotion in which products are placed in television shows and/ or movies to gain exposure’. This definition ignores a number of factors.

First, the preceding section highlighted some similarities product placement shares with advertising, but defining product placement as a ‘form’ of advertising is problematic. Advertising is ‘any paid form of nonpersonal communication about an organisation, product, service or idea by an identified sponsor’ (Belch and Belch, 2001: p15). The distinguishing element of advertising is that it is a ‘paid’ message, but a sponsor does not always pay for product placement (take for example the case of a product given for free as a prop) (Friedman, 2005). Second, Belch and Belch (2001, p14) describe ‘promotion’ as ‘the co-ordination of all seller-initiated efforts to set up channels of information and persuasion to sell goods and services or promote
an idea’. Product placement, however, is not always initiated by a sponsor; sometimes a game publisher or movie studio, for example, may approach a sponsor to request permission for brand use to increase game/ movie realism. The aforementioned definition also implies that only tangible ‘products’ are placed. Explicit reference to services, people, ideas and brands are omitted, although there are numerous examples of these in product placement practice (Ferraro and Avery, 2000; La Ferle and Edwards, 2006; Oleck, 1995). In terms of the medium suitable for product placement, Belch and Belch focus on the most commonly used vehicles ‘film and television’, but ignore the suitability of novels, music and newspapers for the practice as recognised by Friedman (1985, 1986a,b, 1987). The definition also ignores emerging interactive media such as games, the focus of the current research. Finally, it is claimed product placement is used to ‘gain exposure’, but a review of the literature reveals marketers are pursuing the strategy with the aim of positively influencing attitudes, as well as purchase behaviour (Avery and Ferraro, 2000).

Perhaps the best definition currently available in the literature is offered by Karrh (1998, p33) who defines product placement as ‘the paid inclusion of branded products or brand identifiers, through audio and/ or visual means, within mass media programming’. This definition addresses many of the aforementioned weaknesses, however one final limitation is recognised. The use of product placement can be noted across a range of media (movies, television, music, print and games). All of these are captured by Karrh’s reference to ‘mass media’, even games. However, there are implications for how brands and products are placed in interactive media. Not only can they appear visually or verbally, they can be used (discussed at section 2.4.2).

For the purpose of this thesis, the following definition has been developed:

Product placement is a form of marketing communication, which may or may not be paid for, where messages about goods, services, brands, organisations, people and ideas are embedded into content such as film, television programs, newspapers, novels, music, and games in such a way that the sponsor/ brand is identified but the message appears non-commercial, with information presented visually, verbally, integrated with a plot and/ or available for use for the purpose of influencing audiences unobtrusively.
This definition captures the nuances highlighted earlier, but also recognises the unique nature of product placement as a hybrid message. This is a key feature that distinguishes product placement from other forms of marketing communication. Although often a paid product message, unlike other forms of paid communication such as advertising, product placement operates by stealth through the planned but unobtrusive injection of branded products into media content (Babin and Carder, 1996a; Balasubramanian, 1994). In other words, even though the strategy may be used with the intent of influencing audiences for commercial benefit, placements tend to project a non-commercial character. As part of this, the marketer loses a certain degree of control over the product message (this is retained by the production company), but credibility is enhanced, as the message’s commercial origins are often disguised from the audience (Nebenzahl and Jaffe, 1998). Consumers may, however, have varying levels of awareness of commercial intent, depending on the type of media and placement. The various types of placements are discussed next.

### 2.4.2 Evolving Typologies of Product Placement

As portrayed in Figure 2.2, Russell (1998) first classified product placement along three dimensions: visual, auditory and plot connection. A visual placement involves placing a brand in the background of a show, with consideration given to the appearance of the brand on-screen, number of appearances and the style of camera shot. An auditory or verbal placement occurs when a brand is mentioned in a dialogue and can vary depending on the frequency with which it is mentioned, the context and the emphasis on the brand name. Finally, the plot connection dimension refers to the integration of a brand with a story’s plot. This type of placement involves a combination of visual and verbal components and can vary in intensity from a mention of the brand and a brief appearance, to the brand’s central role in the plot and identification with a character.

Russell’s dimensions have relevance across a variety of media, however a fourth dimension is proposed to reflect the emergence of brands and products in interactive media such as games. The nature of these media allows placed products and brands to be used by consumers (take for example the case of an automobile brand that can be driven by a player in a car racing video game). The use of such placements does not occur in a real world context, but in essence is simulated in the medium. It is
therefore proposed that these are use simulated placements, which can vary depending on the extent of their use (reflected in Figure 2.2). The extent of use is likely to be at the discretion of the individual, or game player. Dependent on this factor, such placements may be strongly plot connected. As per Russell’s dimensions, visual or verbal placements may also occur (for example, billboards may be featured peripherally alongside a circuit in a car racing game, or a brand selected for use may be verbally mentioned). These dimensions are discussed further in Chapter 3.

Figure 2.2 A Four-Dimensional Construct of Product Placement

Gupta and Lord (1998) offer a two-dimensional approach for categorising types of product placement, with the first being mode of presentation (the senses activated by the stimulus) and the second being level of prominence (the extent to which the product placement possesses characteristics designed to make it a central focus of audience attention). They categorise placements according to three modes that represent the subtlety or prominence of the placement: visual, verbal and combined. Subtle placements are those where the brand may be merely mentioned or featured as a background prop (and hence it is not central to a scene). Prominent placements,
on the other hand, are those in which the brand is highly visible and central to the story. Nebenzahl and Jaffe (1998) offer a similar framework using two dimensions: disguise (or the extent to which it is apparent the message is commercial in nature in terms of payment and sponsorship) and primacy (the relationship of the persuasive message to the main message of communication). More recently, Sheehan and Guo (2005) recognised the difference between brand/product integration (where the brand is integral to the plot) and brand/product assimilation (where the brand becomes the plot). The key feature of both forms is that the brand plays an important role in the plot and has a long-term connection to the program content.

These frameworks reflect the growing role of product placements in entertainment media. The market is witnessing a shift from traditional forms of product placement, which took advantage of opportunities that may have existed in a script (and whereby products appeared as props incidental to it), to now placements which are strongly connected to the story. The number of placements with high plot involvement and association with characters has increased over the past three decades (Galician and Bourdeau, 2004). In recognition of this evolution, reference is increasingly being made in the literature to integrated placements. It must be noted, however, that although different terms are used in the aforementioned frameworks (integration, assimilation, centrality, prominence, primacy), all are captured by Russell’s (1998) model, specifically the plot connection dimension, and the proposed use simulated dimension in the context of games.

Another means of classifying product placement is based on the type of agreement surrounding the brand or product’s use. It is this agreement which usually determines the prominence of the brand in the entertainment vehicle. Often such agreements are hard to discern, though Friedman (2005) identifies three broad types: paid placements, barter arrangements and gratis placements. Paid placements are often pre-arranged and involve a cash fee in return for a brand or product’s inclusion in a film, television program, game and so on. Barter arrangements involve the product being given as a free sample for use as a prop (often in return for reciprocal promotional exposure). Both of these strategies can be considered proactive marketing activities on the part of the firm. The final classification, gratis placements, is where branded products are used without manufacturer involvement
(Friedman, 2005). Often these placements are used for artistic reasons, at the discretion of the production company, in order to enhance realism (Federal Express in the film *Cast Away* is noteworthy, see, for example, Friedman, 2004). In some instances, these are not considered forms of product placement in the academic literature (see, for example, Balasubramanian, Karrh and Patwardhan, 2006). The focus of the current research is on product placement as a strategy used by marketers, specifically to influence audiences for commercial benefit. While barter arrangements and gratis placements still exist, today pre-arranged, paid placements are more common.

### 2.4.3 Growth of Product Placement

The use of brand names in novels, music and newspapers was first acknowledged by Friedman (1985, 1986a,b, 1987) who termed it ‘word-of-author advertising’. Product placement, however, has traditionally been most prominent in film, whereby products or services have been included in movies in return for cash fees or reciprocal promotional exposure (Nebenzahl and Secunda, 1993). Branded products emerged in film in the 1920s, and began to appear consistently through the 1950s and 1960s (Wenner, 2004). Gordon’s Gin in the 1951 film *The African Queen* is noteworthy. It was not until the 1980s-90s, however, that the strategy gained momentum (Galician and Bourdeau, 2004). Perhaps one of the best known examples is the cameo of Reese’s Pieces in the 1982 film *E.T The Extra-Terrestrial*. Hershey’s did not pay for its inclusion, but many consider this the birth of modern product placement (see, for example, Goldsmith, 2004a; Wasserman, 2005). More recent examples include the BMW Z3 in the James Bond films, Samsung in *Fantastic Four* and Ray-Ban in *Men in Black*.

Reality programming, ad-skipping technologies, personal video recorders, continued audience fragmentation, and the expansion of television into broadcast, cable and syndication has also brought about the use of product placement in television programs (Graser, 2005). In fact, the incidence of placements in television is now greater than in film (Friedman, 2005). Junior Mints featured in *Seinfeld* and Pottery Barn in *Friends* are familiar examples.
Content analyses illustrate the frequency of product placement in film and television, and demonstrate the most common genres used for the practice. The findings from an analysis of the 25 top-grossing Hollywood feature films performed by Troup (1991), and later replicated by Sapolsky and Kinney (1994) are provided at Table 2.1. Patterns were found in the frequency of product placement by movie genre, product category and level of product involvement. These findings are supported by d’Astous and Chartier (2000) who found low-involvement products and comedy films to be most frequently used for placements. Galician and Bourdeau (2004) highlight, however, that the use of high-involvement products is increasing. Their analysis of the 15 top-grossing motion pictures in 1977, 1987 and 1997 (a partial replication of Sapolsky and Kinney’s study) also demonstrates that on-screen placements now account for approximately one quarter of the length of all movies. Consistent with the findings in Table 2.1, they concluded that the number of brand appearances has remained fairly constant, but their length has increased.

Results of content analyses performed in 1997 and 2002 of television programs are presented at Table 2.2. These studies, performed by Ferraro and Avery (2000) and La Ferle and Edwards (2006), investigated the frequency of brand appearances across a one-week period of prime time programming on four and five U.S television networks respectively (La Ferle and Edwards studied The WB in addition to ABC, CBS, NBC and Fox). The investigations involved analysis of 156 programs across 112 hours (Ferraro and Avery, 2000) and 102 programs across 105 hours (La Ferle and Edwards, 2006). Both found situation comedies to be one of the most common genres for TV product placements. Ferraro and Avery (2000) also found news programs to feature many brand appearances. This is consistent with earlier analyses of unpaid placements in network programming (CBS, NBC, ABC) by Fawcett (1993) and Hume (1990), and other studies which support the large number of brands in news programs (see, for example, Wood et al., 2004). La Ferle and Edwards (2006) reported an increase in the number of brand appearances in drama series, which represented only 6.3% of brand appearances in Ferraro and Avery’s analysis. Others have claimed soap operas and drama series are increasingly being used for placements (see, for example, Pervan and Martin, 2002).
Table 2.1 Frequency and Characteristics of Product Placement in Film

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Placements Per Movie</th>
<th>% of Low Involvement Consumer Products</th>
<th>Most Common Movie Genres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>18</td>
<td>68%</td>
<td>- comedy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- drama</td>
</tr>
<tr>
<td>1991</td>
<td>14</td>
<td>70%</td>
<td>- comedy and drama</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- action</td>
</tr>
</tbody>
</table>

Source: Sapolsky and Kinney, 1994; Troup, 1991

Table 2.2 Brand Appearances During Prime-Time Television

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Brand Appearances in Prime-Time Television Programs Across 1 Week</th>
<th>Type of Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>2945</td>
<td>- news (20.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- situation comedy (20%)</td>
</tr>
<tr>
<td>2002</td>
<td>2327</td>
<td>- situation comedy (22.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- special event presentation (17.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- drama series (16.8%)</td>
</tr>
</tbody>
</table>

Source: Ferraro and Avery, 2000; La Ferle and Edwards, 2006

More recently, product placement has also emerged on the internet, specifically in online games. These games have become the fastest growing segment of online entertainment and represent one of the top entertainment destinations on the internet (Kretchmer, 2004). In a content analysis of major food advertisers’ web sites targeting children (77 web sites), Moore (2006) found a total of 546 unique games containing one or more food brands. Eighty-two brands were identified for a total of 107 brand/site pairs. Around 73% of the sites in the study featured games (advergames), and 80% of these games had two or more brand identifiers, such as a brand logo, character or product package. In many instances, it was found that multiple games were included on a single site. Moore (2006) reports an average of 3.6 games on sites that feature only one food brand and 16.4 games on multi-brand sites. One web site was found to house 67 games.

Since Hershey’s and E.T there has been a dramatic increase in the use of product placement, with the strategy gaining significant momentum in recent years. As discussed in Chapter 1, product placement spending is increasing, with the strongest growth represented by television placements, followed by other media (games, music and books), and theatrical film (Friedman, 2005). Worldwide, product placement spending across all media is expected to reach $6.94 billion by 2009 (PQ Media,
2005), up from $3.5 billion in 2004 (Friedman, 2005). Exact costs are difficult to measure, particularly in the case of paid product integration deals where the placement is tied to television advertising buys (often such information is proprietary). It is evident, however, that pre-arranged, paid placements are becoming more popular. The share of paid placements and barter arrangements have increased (Graser, 2005), with gratis placements now accounting for just 7% of the market’s value (PQ Media, 2005; Friedman, 2005).

Product placement now appears to be a much more organised and planned communication strategy, attracting interest from advertising agencies, movie studio departments, television networks, game publishers and advertisers (Turcotte, 1995). An entire industry of placement professionals has emerged to cater to more than 1000 brand marketers (Galician, 2004; Karrh, McKee and Pardun, 2003). Advertising and placement agencies are enthusiastic about the practice, and predict a growing role for placements in future media plans (Karrh, McKee and Pardun, 2003; Pardun and McKee, 1996). To them, product placement represents a new revenue source: annual retainer fees paid to specialty placement agencies can range from tens of thousands, to a few million dollars a year (Wenner, 2004). Second, for movie studios/television networks/game publishers (creative professionals), it presents an opportunity to create more realistic settings and game environments (Pennington, 2001; Sapolsky and Kinney, 1994). It also generates revenue to offset rising production costs (Alsop, 1988; McCarthy, 1994): it was estimated in the late 1990s that around 15% of revenue from feature films was generated from product placement (Twitchell, 1996), while more recently it has been suggested that placements can reduce production costs in content by up to 25% (Renner, 2003). For moviemakers, it also provides cost savings associated with movie promotion when tie-in arrangements are used to promote the film (marketers of placed brands may promote the film in their subsequent communication activities) (Lang, 1990).

More importantly, for advertisers, product placement allows the targeting of specified, pre-segmented audiences (McKechnie and Zhou, 2003) and provides a new means of communicating with them. The strategy is attractive to marketers, as it offers a greater reach than traditional advertisements (Hulin-Salkin, 1989; Pardun and McKee, 1999) and is more cost efficient. Further, it provides an opportunity to
demonstrate brands in natural environments to a captive audience (Turcotte, 1995). High repetition and exposure can be achieved, which is significant since brand loyalty is related to the frequency of brand exposure (Diener, 1993; Massad and Reardon, 1996). Product placement also implies endorsement when an actor or character uses the product/brand (Adamson, 1996), which sends a strong message, particularly for viewers involved in the storyline and who feel an affiliation with and loyalty to the characters (Diener, 1993; Friedman and Friedman, 1979; Kaikati, 1987; McCracken, 1989). It may also provide a means of communicating social messages in a more powerful way, such as those relating to safe sex (Reed, 2003) or breast feeding (Turner, 2004b). Finally, and perhaps most importantly, product placement is less obtrusive than other forms of promotion. It is this final point that provides the foundation for much of the criticism concerning its use.

2.4.4 Controversy Surrounding Product Placement

The increased use of product placement has received criticism from consumer advocacy groups, anti-consumerists, public policy officials, the media and some consumers. Apart from the claim that increased commercialism is jeopardising the artistic integrity of movies (Miller, 1990), the covert nature of product placement has stimulated debate concerning regulatory and ethical issues. The key concern is that consumers may not be aware of the commercial intent of placements and may therefore be unable to develop counterarguments (since their defences against persuasion may be down) (Friestad and Wright, 1994; Solomon and Englis, 1994a). It has been argued that this is deceptive advertising (Shermach, 1995), which causes consumers who are unaware of the persuasive intent to engage in purchase behaviours (Berkowitz, 1994; DeLorme and Reid, 1999; Lipman, 1989).

Ethically charged products such as cigarettes, alcohol and firearms have been a focus in the product placement debate. The placement of tobacco products in film has received particular attention. An analysis of the five top-grossing films over a six-year period found only one lead character smoked in 1990, but 80% of male leads smoked in 1991 to 1996 (Hwang and Lippman, 1998). Smoking in movies is often associated with good health, youthful vigour, good looks, personal/professional acceptance and high socio-economic status (Hazan, Lipton and Glantz, 1994). Concerns have been expressed that this may encourage smoking among adolescents,
particularly young girls (Dalton et al., 2002; Distefan, Pierce and Gilpin, 2004; Sargent et al., 2001; Stockwell and Glantz, 1997; Terre, Drabman and Speer, 1991; Tickle et al., 2001). Youths are more impressionable and are three times more likely than adults to be frequent moviegoers (Terre, Drabman and Speer, 1991), watching an average of three films per week (Glantz, 2001). They also watch more programs in which product placement appears than older people (Neijens and Smit, 2003). It has been suggested tobacco advertising and promotion influences youths (Pollay and Lavack, 1993; Pollay et al., 1996) and that smoking scenes in movies may positively arouse young viewers, enhance perceptions of the social stature of smokers, change attitudes toward smoking, and increase perceptions of the social stature of smokers, change attitudes toward smoking, and increase smoking intention (Hines, Saris and Throckmorton-Belzer, 2000; Hoek, Gendall and Patton, 2002; Pechmann and Shih, 1999). Gibson and Maurer (2000) found that some non-smokers (mean age 20 years) reported more favourable attitudes toward smoking after exposure to a twenty-minute movie segment in which the lead actor smoked.

A second key theme in the product placement debate, as evident in the previous discussion, is the effect of placement messages on younger consumers. Children in particular have, for a long time, been a key concern, as they are claimed to be uniquely susceptible to promotion (American Psychological Association 2004; John 1999; Moore, 2004; Moses and Baldwin, 2005). This is largely due to their lack of cognitive skills necessary for message evaluation (see John, 1999 for a review). More recently, concerns have been raised about new forms of product placement targeted to this group, most notably brand-centred games (advergames) (Oanh Ha 2004; Pereira, 2004; Wade 2004). It is estimated that approximately 64% of children aged 5 to 14 years who access the internet do so to play games (U.S Department of Education, 2003) and spend an average of 25 minutes on each gaming site (Bertrim, 2005; Fattah and Paul, 2002; Pereira, 2004). These games, which appear on over 55% of web sites aimed at children and teens (Neuborne, 2001), are predominantly for food and beverage products such as Coca-Cola, Fruit Loops and McDonald’s. At a time when childhood obesity is rising (Raloff, 2004), there is growing speculation that they may encourage poor eating habits, leading to poor health in the long-term (American Psychological Association 2004).
It is commonly held in the social sciences that individuals rely heavily on perceptions of their social environment in the formation, maintenance and mediation of impressions, attitudes and behaviours (Lee and Lee, 1995; O’Guinn and Shrum, 1997). Movies have been found to influence a wide range of audience behaviours including imitations of adult conduct, childhood play, emotions, daydreaming and lifestyles (Blumer, 1933). It has been argued that media images, television and movies can act as a training tool for the socialisation process; shape and influence audience interpretations of the world; affect social judgments; shape cultural values; influence an individual’s attitudes and perceptions; and affect consumption-related social perceptions and beliefs (Blumer, 1933; Forgas and Moylan, 1987; Gerbner et al., 1982; O’Guinn and Shrum, 1997). It is claimed then that brands appearing in such media may also have the potential to create strong symbolic environments for consumers (Avery and Ferraro, 2000; Elliott and Wattanasuwan, 1998) and facilitate consumer self-concepts (Hackley and Tiwsakul, 2006).

In accordance with the modelling paradigm (Bandura, 1977), it has been argued that product placement can facilitate learning through audience identification, and that placements which reinforce product use help individuals acquire brand preference and/ or consumption behaviours that benefit the sponsor (Balasubramanian, 1994). There is evidence to suggest moviegoers learn by viewing brand props and extend that learning beyond movie-specific experiences to consumption-specific situations, where they relate that learning to aspects of their lives as consumers. In a study conducted by DeLorme, Reid and Zimmer (1994), respondents indicated the use of familiar brands in movies helps bring them closer to the characters. They reported gathering information about characters and their lifestyles, and comparing it with their own lives. Moviegoers have also reported brand props help provide useful information for making and reinforcing purchase-related choices (DeLorme and Reid, 1999). According to social learning theory, repeated exposure to modelled behaviour can result in behavioural change (Bandura, 1977), which may be contributing to concerns regarding the use of some products in film, television and games.

Despite the controversy surrounding product placement and attempts by advocacy groups to have the practice banned or regulated, formal public policy has been little
influenced (DeLorme, 1995). Sponsorship identification rules apply in the U.S, U.K and Australia, but only for television paid placements and barter arrangements (Karrh, 1998; Maynard and Scala, 2006; Snyder, 1992). Such rules essentially require disclosure of paid endorsements to make the distinction between advertising and editorial content clearer to consumers (Siegel, 2004), however differences in policy are evident across these nations (restrictions are much tighter in the U.K). Also, film, music and interactive media such as games remain largely unregulated. Instead, codes of ethics established by emerging industry groups such as the Entertainment Marketing Association (formerly the Entertainment Resources and Marketing Association) in the U.S, and the Entertainment Marketing Association in the UK, guide strategy decisions (Curtis, 1996; Wenner, 2004).

There are a number of challenges surrounding the development of formal regulations for product placement. First, there is ongoing debate as to whether the practice constitutes commercial speech and is therefore subject to regulation (c.f. Grossman, 2005a; Lackey, 1993; Siegel, 2004; Snyder, 1992). Proponents argue that to impose legislation would limit artistic freedom and remove the opportunity for verisimilitude, or the ‘air of truth’, which placements lend to entertainment media (Balasubramanian, Karrh and Patwardhan 2006). Further, contrary to claims made by critics, it has been demonstrated that consumers are sophisticated in their understanding of product placement and are generally receptive to it. It has been shown that the media in which products and brands are placed are accepted first and foremost for their entertainment value, with placements perceived as enhancing the realism and enjoyment of that entertainment (DeLorme and Reid, 1999; DeLorme, Reid and Zimmer, 1994). Although critics assert that audiences are vulnerable to deception because they do not realise they are being advertised to (c.f. Turner, 1991), evidence suggests consumers are becoming increasingly savvy, hence they are less likely to be deceived (Goodman, 2006). Even adolescents have a generally high awareness of placements (Nelson and McLeod, 2005), as do college students. A study by Karrh, Frith and Callison (2001) found that American college-aged moviegoers tend to recognise that placements are usually a form of paid advertising, they are less concerned with the ethics of placement, and less likely to support government restrictions on the practice. Gupta, Balasubramanian and Klassen (2000) and Ong (2004) found similar results.
Although moviegoers appear to be active participants in the movie-viewing process and actively interpret brands contained within them (DeLorme and Reid, 1999), a final challenge concerning regulation is that there is inconclusive evidence of product placement’s effects. Whether there is a causal relationship between product placement and actual purchase behaviour has not been validated by empirical research. In fact, it has been demonstrated that only some brands will show a mild and likely short-term effect in terms of brand salience. Even then, consumers who can remember brands in movies do not necessarily have increased purchase intentions (Ong and Meri, 1994). A review of the limited earlier research into product placement’s effects is presented next.

2.5 Understanding Product Placement in Traditional Media and Its Effects

The definition of product placement presented at section 2.4.1 recognises that product placement is used as a strategy to influence audiences unobtrusively. Exactly the influence it has, however, remains an important research question. While there is much speculation in the practitioner literature, empirical evidence is lacking. Product placement research to date has largely focused on brand awareness outcomes, with fewer studies investigating attitudinal effects, purchase intention or behaviour. A review of this extant literature concerning product placement in traditional media is necessary, before seeking to understand placements in a game context.

2.5.1 Product Placement and Memory Effects

A number of studies have investigated the effects of product placement on brand awareness. In fact, most product placement research performed to date has focused on only this one consumer response outcome. Some studies have found high levels of recall and recognition for brands placed in film (Babin and Carder, 1996b; Baker and Crawford, 1996; Vollmers and Mizerski, 1994; Yang, 2004; Zimmer and DeLorme, 1997), television programs (Russell, 2002) and even games (discussed at section 2.6.1). Other investigations, however, have demonstrated inconsistent or insignificant effects.
In an experiment conducted by Karrh (1994) to explore the effect of product placement in film, brand salience was significantly higher for only one brand prominently and repeatedly displayed, and no significant differences were noted in brand evaluations. Ong and Meri (1994) found low levels of unaided recall of brand props, with recall ability and patterns differing greatly among individual theatregoers. Bennett, Pecotich and Putrevu (1999) found evidence of recall effects, but amongst those who were given a prime (respondents were given a list of movie-placed brands). Johnstone and Dodd (2000) showed that product placement is able to raise brand salience, though this effect was inconsistent, with recall seemingly dependent on the type, length and context of the placement, as well as the attention, liking and levels of self-monitoring of the audience. Other researchers have found high levels of recognition, but low levels of recall (Babin and Carder, 1996a; d’Astous and Chartier, 2000).


These different findings reported in the product placement literature may be due to the fact that recall impact depends on several factors, including stimulus, situational and individual factors (Mitchell, 1983). The effect of stimulus factors in particular, has been the subject of many product placement investigations.

Stimulus factors include the content of a message (what information is presented) and its structure (how the information is presented, such as whether it is verbal or visual). Both are able to affect the amount of attention a viewer devotes to an ad and the level of message comprehension. Prominent placements in movies (where the brand is highly visible and/or central to the story) have been found to elicit higher recall and recognition than subtle placements (Brennan, Dubas and Babin, 1999; Gupta and Lord, 1998). Peripheral placements, on the other hand, tend to result in
lower levels of explicit memory (McCarty, 2004; Yang, 2004). Consistent with the dual-code memory theory, which holds that recall is enhanced if information is coded in two systems (Leong, Ang and Tham, 1996; McKelvie and MacGregor, 1996; Paivio, 1979, 1983, 1986), placements involving visual and verbal identification have also been found to elicit higher recall and recognition (Balasubramanian, 1994; Brennan and Babin, 2004; DeLorme and Reid, 1999; Sabherwal, Pokrywczynski and Griffin, 1994; Steortz, 1987). A verbal movie placement without a visual reinforcement of the product however elicits higher recall than a visual placement without audio (Gupta and Lord, 1998; Steortz, 1987), while character usage of brands produces better recall (Steortz, 1987) and recognition (Yang, 2004) than brands displayed as background props.

Recall impact can depend on where the product is displayed, its integration with the plot, endorsement by a favourable actor, duration of the exposure, and whether it is explicitly mentioned in the script (Balasubramanian, 1994; DeLorme and Reid, 1999; Karrh, 1994). Distinctive stimuli are typically best remembered (Gati and Tversky, 1987; Nairne et al., 1997; Waddill and McDaniel, 1998), with placements in the foreground of a scene, that are verbally mentioned, use humour and involve character usage found to positively affect memory (d’Astous and Chartier, 2000; Zimmer and DeLorme, 1997).

Memory is also influenced by the modality of placement presentation and the degree of connection between a brand and a show’s plot. The ‘von Restorff effect’ holds that novel or unexpected information captures one’s attention, is processed more extensively and is subsequently more likely to be recalled (Wallace, 1965), but the increased elaboration associated with extreme incongruency negatively affects evaluations (Friestad and Wright, 1994). This has been found to be the case with product placement; memory improves when modality and plot connection are incongruent, though incongruent placements adversely affect brand attitudes (Russell, 2002). Overall, high congruity in both film and television results in better evaluations and ethical judgments, though generally poorer memory performance (d’Astous and Chartier, 2000; d’Astous and Seguin, 1999; DeLorme and Reid, 1999; DeLorme, Reid and Zimmer, 1994).
Reactance theory states that a consumer’s response is determined by the degree to which attempts to change behaviour involve persuasion and coercion, and intrude on a person’s freedom (Edwards, Li and Lee, 2002). Consumers may remember placed brands, but trust in brand claims and towards the medium can decline as consumers become more aware of the persuasive attempt and commercial nature of branded information (Bhatnagar, Aksoy and Malkoc, 2003). It seems reasonable that viewers will raise their cognitive defences when a placement does not fit with the plot of a show or is an unexpected focal point. If a viewer infers a bias in the message communicator, then message persuasiveness may be reduced (attribution theory) (Balasubramanian, 1994). As in sponsorship where ‘fit’ is a major determinant of a sponsor’s image (Meenaghan, 1983) and attitudes towards the sponsor (Cornwell, Pruitt and Van Ness, 2001; Crimmins and Horn, 1996; Johar and Pham, 1999; Mitchell, Kahn and Knasko, 1995; Rifon et al., 2004; Speed and Thompson, 2000; Stipp and Schiavone, 1996), audience perceptions of fit across product/ medium/ communicator/ message dimensions are important for the success of product placement.

To date, consumer memory has been the most common measure of product placement effectiveness. Memory-based tests measuring recall and recognition have been advocated or used in the majority of academic studies, and even among practicing marketers the measure is being used to guide strategy decisions. Practitioners, including placement agents, believe recall (both aided and unaided) is the best measure of placement success (Karrh, 1995; Karrh, McKee and Pardun, 2003). This however poses a number of problems.

First, short-term measures have been used in general, which is problematic since long-term recall is important for building brand equity (Aaker, 1996). Brand recall and recognition weaken with the passing of time following brand exposure (Estes, 1997; Franzen, 1994; Keller, 1993; Keller and Aaker, 1992; Quester and Farrelly, 1998). This has been demonstrated in both product placement investigations (see, for example, Ong, 2004) and advertising research, which has shown that typically 20 to 30 minutes after exposure to an ad, 25% of people have no recollection of the advertised brand, 10% incorrectly name the brand and 10% have only a vague recollection of the product category (Franzen, 1994). Second, recall and recognition
measures (explicit memory tests) may only be appropriate for placements that elicit higher levels of conscious processing (Balasubramanian, Karrh and Patwardhan, 2006). If placements operate less consciously (similar to low-involvement ads - see, for example, Krugman, 1965) implicit memory tests are necessary (for a complete discussion see Yang, 2004). Finally, a reliance on brand awareness as a measure of effectiveness overall is problematic, as brand awareness is a poor predictor of persuasion (Mackie and Asuncion, 1990). There is evidence to suggest that brand attitudes, brand image and purchase intention are processed differently from brand memory (Auty and Lewis, 2004a,b; Van Reijmersdal, Neijens and Smit, 2007). Even if an individual can remember seeing or hearing a brand, it does not mean his or her attitude toward the brand will change, nor their intention to purchase. Attitudes, on the other hand, are a more powerful and enduring measure, as it is attitudes which can influence purchase intention and behaviour (Achenbaum, 1970; Lutz, 1977; Shimp, 2000). In the product placement domain, limited work has been performed in this area.

2.5.2 Product Placement and Attitudinal Effects

A series of studies have sought to understand consumers’ attitudes toward the practice of product placement itself. These investigations have found that, generally, consumers welcome product placement in film, as it can enhance reality, aid in character development, enrich the plot/ theme/ characters, and provide a sense of familiarity (Babin and Carder, 1996a; DeLorme and Reid, 1999; DeLorme, Reid and Zimmer, 1994; Gould, Gupta and Grabner-Krauter, 2000; Gupta, Balasubramanian and Klassen, 2000; Gupta and Gould, 1997; Hirschman and Thompson, 1997; Karrh, 1998; Nebenzahl and Secunda, 1993; Ong and Meri, 1994; Zimmer and DeLorme, 1997). This has also been found to be the case in television (Gould and Gupta, 2006; La Pastina, 2001; Stern and Russell, 2004; Tiwsakul, Hackley and Szmigin, 2005), and even games (discussed at section 2.6).

Consumers prefer the subtle use of brands in movies to the use of generic products, which can interfere with realism and involvement and lead to irritation (DeLorme and Reid, 1999; DeLorme, Reid and Zimmer, 1994). Individual differences however in gender, age, nationality, movie-viewing frequency and relevant attitudes can affect its acceptability (Gupta and Gould, 1997; McKechnie and Zhou, 2003;
Nebenzahl and Secunda, 1993). For example, frequent program viewers exhibit more positive beliefs and attitudes toward product placement (Neijens and Smit, 2003), while those who dislike ads generally tend to display more negative attitudes (Gupta, Balasubramanian and Klassen, 2000). However, even Generation X consumers, who tend to be particularly sceptical of advertising, may accept them as realistic props (Stern and Russell, 2004). Adolescents, especially those who are more attuned to brands (or brand conscious), also hold positive attitudes towards the practice (Nelson and McLeod, 2005). Older consumers, on the other hand, tend to dislike placements and consider the practice manipulative (DeLorme and Reid, 1999; Ong, 2004).

Consumers are less receptive when there is too much repetition, commercial motivations are obvious, or ethically charged products are used (such as cigarettes, alcohol and guns) (DeLorme and Reid, 1999; DeLorme, Reid and Zimmer, 1994; Gupta and Gould, 1997). American and Australian males, however, are more accepting of ethically charged placements (Brennan, Rosenberger and Hementera, 2004; McKechnie and Zhou, 2003). Singaporeans and Chinese consumers view placements as less acceptable and tend to be more concerned with placement ethics (Karrh, Frith and Callison, 2001; McKechnie and Zhou, 2003), perhaps because placements appear less commonly in Asian film (Devanathan et al., 2003).

Generally, product placement has been described as an effective marketing communications technique, which is less obtrusive than other forms of promotion (Nebenzahl and Secunda, 1993). The positive attitudes towards product placement amongst consumers is significant, because a number of empirical studies in the advertising literature have shown support for the role of attitude towards the ad as a mediator of advertising effects on brand attitudes (Batra and Ray, 1986a; Cacioppo and Petty, 1985; Gorn, 1982; Lutz, MacKenzie and Belch, 1983; MacInnis and Jaworski, 1989; MacKenzie, Lutz and Belch, 1986; Mitchell, 1986; Mitchell and Olson, 1981; Moore and Hutchinson, 1983; Park and Young, 1986; Shimp, 1981). Even in the sponsorship literature, there is evidence that attitude towards a sponsorship can affect corporate image (Pope, 1998). One might therefore conclude that product placement is more likely to have a positive effect on brand attitudes and corporate image since attitudes towards product placement itself are positive.
Respondents in a study conducted by Babin and Carder (1996a) however possessed positive attitudes towards the practice of product placement, but their brand attitudes were not affected.

Few studies have sought to investigate the direct impact of product placement on brand attitudes, and those that exist have produced mixed results. An investigation by Russell and Stern (2006) of product placement in television serial comedies found consumers’ brand attitudes are influenced by placed products, but this is driven by the program characters’ attitudes to those products and consumers’ attachment to the characters. Weaver and Oliver’s (2000) investigation of placements in sitcom Seinfeld produced similar results, though more favourable attitudes (of prominent brands) were exhibited by respondents with a positive attitude toward the program. In an earlier study performed by Russell (2002), attitude change was again detected, however this was negative in the case of incongruent placements and only weak (albeit positive) in the case of visual ones. Sheehan and Guo (2005) present perhaps the most promising findings, demonstrating that a brand assimilated with program content (in other words where the brand becomes the plot) can influence brand attitudes, but only among non-users. A number of other studies investigating response outcomes, however, have found no attitudinal effects of product placement (Baker and Crawford, 1996; Vollmers, 1995; Vollmers and Mizerski, 1994).

It is notable that most of the same studies which have found no evidence of attitudinal effects have reported high levels of recall and recognition. Russell’s (2002) empirical study, for example, revealed that although a viewer may remember seeing or hearing a brand in a show, it does not mean his/her attitude toward the brand will change. This is supported by research conducted by Babin and Carder (1996a) who found no significant differences between treatment and control groups in terms of attitudes toward the brands examined, even though the treatment group demonstrated greater brand salience. In an experiment involving college students to examine the impact of product placement on memory and affect, Vollmers and Mizerski (1994) found high levels of unaided recall of brands in movies, but no significant difference between the treatment and control groups in terms of affect for the products. Vollmers (1995) also found that while second, fourth and sixth grade children recognised brands placed in a film, there was no change in affect or
immediate preference toward the placed brands. Finally, Baker and Crawford (1996) found high levels of aided and unaided recall of placed brands, but only 16% of postgraduate students surveyed reported a preference for placed brands immediately after viewing.

The relationship between awareness and attitudes is a contentious one, but it is generally held that awareness is a critical construct in attitude formation (Shimp, 2000), and that it can accelerate the acquisition of beliefs and affect (Kim, Allen and Kardes, 1996). Traditional cognitive response theory proposes that message comprehension is necessary for responses to occur (Brock and Shavitt, 1983), so one might assume that product placement is capable of influencing brand attitudes, considering the body of literature that demonstrates positive memory effects. It appears however that, in this context, there may be no correlation between memory and attitude measures. Studies by Auty and Lewis (2004a,b) and Van Reijmersdal, Neijens and Smit (2007) indicate the effects of product placement can be established without memory of the placement. Even in Russell’s (2002) study, respondents did not consciously recognise lower plot visual stimuli, but their attitudes were positively affected.

In a similar vein, one must also consider the fact that persuasion without awareness can occur when commercial images are embedded into program content in such a way that viewers do not realise they are being appealed to (Wilkie, 1994). This is a key aim of product placement and one of its major criticisms amongst advocacy groups, as discussed in section 2.4.4. In this instance, consumers may not consciously recognise a stimulus, but their brand attitudes, feelings and evaluations can be positively affected at a subconscious level (Wilkie, 1994). Responses may also be generated by the ad context, which can carryover to evaluations of the ad or brand (MacInnis and Jaworski, 1989), consistent with the peripheral route of the elaboration likelihood model (discussed at section 2.8.1).

Peripheral cues within a communication have been shown to have their greatest impact on message reception when involvement in the message is low (Petty, Cacioppo and Schumann, 1983). This does indeed seem plausible since the mediums in which products/brands are placed (such as film, television and even
games) aim to excite and grip the viewer, resulting in heightened psychological and physiological activation. In these situations, a viewer may be distracted from the conscious and purposeful processing of advertising messages. An emerging area of research examines the effects of subconscious processing of product placement. Linked to theories of priming (the behavioural influence of exposure to information below the level of conscious awareness) (Shen and Chen, 2007) and mere exposure (brief subliminal exposure) (Zajonc, 1968), early findings indicate that subtle visual placements, while exhibiting lower recall and recognition than verbal placements, produce greater brand preference effects (Law and Braun, 2000; Law and Braun-LaTour, 2004).

There is evidence to suggest that brand image may also be influenced implicitly. No research has been performed to explore the effects of product placement on corporate image, though Van Reijmersdal, Neijens and Smit (2007) recently investigated brand image. This study found product placement can influence brand image, dependent on the frequency of exposure. The effect on brand image was not mediated by brand memory (recognition), or brand attitudes. Rather, evaluation of the television program in which the brand was placed affected evaluation of the brand - brand image was influenced in the direction of the program image, with the association between the two becoming stronger with multiple exposures. Interestingly, no effects were evident on brand attitudes. The stimulus used in this study, however, was an informational television program, which featured only one brand. Scripted content about this brand was delivered by a company employee, who explicitly expressed the benefits of brand use. It is questionable whether this can be considered a ‘brand placement’ since a distinguishing feature of placements is that they make no call to action. This is more closely associated with being an infomercial or plug. Evidence suggests that memory for plugs is organised differently from placements and that they are processed differently, making them more effective (Roehm, Roehm and Boone, 2004).

### 2.5.3 Product Placement and Purchase Intention/Behaviour

Placement practitioners and others claim product placement has the potential to increase sales (Karrh, McKee and Pardun, 2003; Pechmann and Shih, 1999). Hershey’s, for example, claims sales for Reese’s Pieces increased 66% after its
placement in *E.T* (Tylee, 2005), while Omega claims a 40% increase subsequent to its watch placement in Bond film, *Tomorrow Never Dies* (Stewart-Allen, 1999). The growth of coffee bars such as Starbucks and New World Coffee has even been attributed to their inclusion in sitcoms such as *Friends* and *Frasier* (Tueth, 2000). It has also been argued that film product placement can lead to increased market value for a firm. Wiles and Danielova (2006) examined the impact of product placement on a firm’s stock market return, finding a positive mean cumulative return of 0.90%.

The aforementioned results, although seemingly positive, may be attributable to tie-in promotional activities. Even the results of Wiles and Danielova’s (2006) study suggest such activities augment product placement’s shareholder wealth creation. The problem is that, despite much speculation in the practitioner literature, few empirical investigations have been conducted of the direct impact of product placement on consumers’ purchase intention or behaviour. Where empirical research does exist, the findings are contradictory.

Baker and Crawford (1995) and Morton and Friedman (2002) found evidence that product placement may influence purchase intention. Baker and Crawford (1995) found purchase intention for placed brands to be higher than for brands previously identified as ‘favourites’ by their study participants. Morton and Friedman (2002) however found the opposite. They identified a small increase in purchase intention of previously favoured brands and found that beliefs about the portrayal of placements in a movie may predict product usage behaviour (this behaviour was however self-reported and the results concerning the extent of influence inconclusive). In their investigation of television product placement, Russell and Puto (1999) found that individuals who have a strong connection to a television program are more susceptible to consumption images, demonstrating that ‘connectedness’ may moderate the effect of television placements on behaviour. Other investigations however have found no effects. Tiwasakul, Hackley and Szmigin’s (2005) study did not find a strong relationship between product placement and self-reported purchase behaviour. Ong and Meri (1994) also found no relationship between brand appearances and purchase intentions.
One final stream of research in this area has examined brand choice/preference. The practitioner literature suggests product placement can facilitate this response (Rosen, 1990). Auty and Lewis (2004a) show that placements can influence brand preference, but as a result of repeated exposure. Notably, they found this occurs regardless of recall of the placement. Likewise, Law and Braun (2000) found visual placements influenced choice, but they were least recalled. These studies suggest the effects on brand choice/preference may therefore not be mediated by brand memory, similar to findings with regards to attitudinal effects.

2.5.4 Summary

Existing research concerning product placement in film and television offers relevant theories and insights into how placements in games might operate, but even here there are gaps in the literature concerning effects. In the context of traditional media, which have a longer history of being associated with the strategy, it remains unclear whether placements can facilitate deeper consumer responses, such as attitudinal and behavioural outcomes. Further, it cannot be assumed that the same audience effects will be demonstrated for product placement in games, as there are several differences among media contexts. These differences may mean different roles for products, and a variety of possible meanings and effects (Gould and Gupta, 2006). The following section presents a review of research concerning video game product placement and of the games medium.

2.6 Video Game Product Placement

Marketing in games can take different forms, as outlined in Chapter 1. There are two broad ways in which they can be used for promotional messages: marketers can either connect their brands to an existing game, or custom publish their own games, called advergames (Gunn, 2001; Mack, 2004). In both cases, marketers feature their products and brands using a strategy of product placement, whereby brands are featured in the background or incorporated into the plot (Delaney, 2004). These represent the two most common forms of product placement in a game context: visual placements, where brands are featured peripherally (for example, billboards alongside a racetrack) and plot connected placements, where in some cases the connection may be so strong the product is simulated in use (for example, driving a
vehicle in a racing championship). These placements may be featured in computer, arcade, online or console-based games. Consoles have proven to be far more popular for placement messages (Taub, 2004; Williams, 2002).

In all of these contexts, player attitudes towards product placement have generally been found to be positive. Although individuals who dislike advertising have tended to display more negative attitudes, in most cases players have been found to appreciate subtle brand messages in a game format (Nelson, Keum and Yaros, 2004). Video gamers report they do not consider product placement deceptive, nor believe it impairs or interrupts game play (Molesworth, 2006; Nelson, 2002). Likewise, online advergame players report they too are receptive to these messages (Hernandez et al., 2004a; Winkler and Buckner, 2006). Players indicate, however, that acceptability depends on the game genre and scenery (Molesworth, 2006; Nelson, 2002), and whether the placement adds realism (Nelson, Keum and Yaros, 2004). As in the case of traditional media, placements must fit with the context of the game. Their suitability appears to be contingent on how well that context matches reality, with poorly placed and unrealistic advertising capable of deterring from the game experience (Nelson, 2002). Incongruent placements can also result in perceptions of intrusiveness and negative attitudes towards the game (Hernandez et al., 2004a).

Although research concerning attitudes towards the practice of product placement in games has produced positive results, the literature concerning its effects is scant. Despite much speculation in the trade literature as presented at section 1.3.4, few empirical studies have sought to investigate the direct impact of placements on brand awareness, attitudes and behaviour.

### 2.6.1 The Effects of Product Placement in Games

The most prominent study available in the literature is that of Nelson, which showed placements in console video games can influence brand awareness. Nelson (2002) investigated the effectiveness of product placement in car racing games across two different studies, using free recall measures directly after game play and after a five-month delay. She found that players were able to recall brands in both instances (the brands of cars driven and peripheral billboards), even upon playing for the first time or for only a limited amount of time. Brand familiarity as well as brand name size
did not appear to have an effect. Brand usage/ appearance was found to be important for recall superiority, with brand relevance particularly important for long-term recall. This lends support to existing research on the importance of relevance in gauging advertising effectiveness (Mitchell, 1981, 1983). Local brands also fared better than national brands, while novel brands fared best (suggesting differential memory effects based on product life cycle stages). This may have been due to a type of novelty effect which has been linked to superior recall performance and liking (Chandy et al., 2001; Zhang and Markman, 1998), even in the case of traditional outdoor billboards (Fitts and Hewett, 1977; Hewett, 1975).

Similar to Nelson, Schneider and Cornwell (2005) tested product placement in a console-based car racing game. They too found players (males) were able to recall placed brands, particularly prominent ones. Prominence has been recognised as an important determinant of awareness outcomes in other studies of outdoor billboards (see, for example, Donthu, Cherian and Bhargava, 1993) and product placement (see, for example, Brennan, Dubas and Babin, 1999; Gupta and Lord, 1998; Karrh, 1994). Schneider and Cornwell (2005) also found that previous game experience was positively associated with recall ability. This may have been due to past exposure serving as a prime for the placements. It has been proposed that a consumer’s memory of prior exposure or consumption can serve as a prime (DeLorme and Reid, 1999) and that such primes will produce better cognitive outcomes (Balasubramanian, Karrh and Patwardhan, 2006). Indeed, in the context of film, Bennett, Pecotich and Putrevu (1999) found that consumers who were given a prime in the form of a list of movie-placed brands performed better on brand recall than a control group.

Recently, studies have also emerged concerning online and computer games. Two have investigated advergames (where only one brand is featured) in the online environment. Winkler and Buckner (2006) studied a BMW car game, Nabisco golf game and M&M’s puzzle game, demonstrating an effect on awareness. They reported relatively high levels of recall of companies, brands and products. Of those players who could remember seeing a logo, 97% could recall at least one position of it within the game. Hernandez, Suh and Minor (2005), on the other hand, investigated online advergames and brand memory (recall and recognition) amongst
bilingual consumers, finding relatively low recall and recognition scores for all respondents.

A further two studies have investigated online games, but they represent a departure from other investigations of brand memory performed to date. Chaney, Lin and Chaney (2004) and Grigorovici and Constantin (2004) explored the effects of placements on brand recall, but in both cases the online game stimulus was specifically developed for the purpose of experimentation. The games also featured multiple brands and therefore do not adhere to the advergame definition.

Chaney, Lin and Chaney (2004) investigated billboards for fictitious brands in an online first-person shooter game. They found low brand recall amongst the male gamers studied, despite the fact that the placements had been intentionally inserted into the stimulus and therefore stood out from the game background. Their results demonstrated that the products featured had a greater chance of being recalled than the actual brands. Similarly, Grigorovici and Constantin (2004) found placements in a 3D online computer game can influence recall, though ad type had a significant main effect. They studied three different products: a car, phone and soft drink. Like Schneider and Cornwell (2005), they found that more prominent placements were better recalled. Placements on billboards were recalled better than on-set product placements both in terms of the object and brand, except in the case of the car. Unlike Nelson (2002), the size of the placement was found to have an effect. Interestingly, no effects of ad type were found on brand recognition or preference. Perhaps Grigorovici and Constantin’s (2004) most interesting finding is that presence (discussed at section 2.6.2) and arousal had a significant effect, though this was not necessarily positive. Higher engagement in the game resulted in lower recall, recognition and brand preference scores. Similarly, high arousing game worlds were associated with lower object recall, though arousal level had no effect on brand recall or recognition.

With regards to computer games, Yang et al. (2006) explored the effects of placements in car racing and soccer games. These were played on a computer, though console versions are also available. Unlike the aforementioned studies, Yang et al. (2006) investigated the influence of placements on memory using both explicit
memory (a recognition task) and implicit memory measures (a word-fragment completion test). They found that game placements can influence both implicit, unconscious memory as well as explicit, conscious memory. In the case of the latter, however, only a small effect on brand recognition was detected.

Finally, two qualitative studies have been performed that explore the effects of product placement in games on brand recall. Molesworth (2006) conducted a series of focus groups with video and computer gamers, finding that players can recall encounters with brands during game play. In a separate study by Kuhn, Pope and Voges (2007), a focus group was conducted, whereby gamers were exposed to the introductory footage of a game (a short trailer) and questioned about the brands they could remember. It was found that subjects could recall placements even after brief exposure, particularly those respondents who classified themselves as regular game users. Prominent placements also seemed to be recalled better, though recall overall was not particularly strong.

A review of the literature reveals there is a growing body of work examining placements in a game context, but most of this research has focused on brand awareness outcomes. Only two studies represent exceptions: Bambauer’s (2006) investigation of attitudes and Mallinckrodt and Mizerski’s (2007) study of preferences.

Bambauer (2006) used a newer version of the console car racing game studied by Nelson (2002) to test whether playing a game can cause an attitude change toward placed brands. He also examined the effects of attitude toward the game, attitude toward product placement and flow on attitude change. His sample was made up predominantly of men who indicated they play games ‘regularly’ or ‘frequently’. Bambauer found that visual brand placements (featured on perimeter fences and a car) positively change attitude toward the brand, but only if the brand placement and game are evaluated positively. Flow was found to have a positive effect on attitude toward the game, which in turn had a significant positive effect on the change of attitude toward the brand. A positive attitude toward the brand placement also had a strong and positive effect on brand attitude.
Mallinckrodt and Mizerski (2007) explored the perceptions, preferences and requests of young children (aged five to eight) after exposure to a web-based advergame for Froot Loops cereal. Although the game made a superiority claim for the cereal compared to fresh fruit, no effects were evident on respondents’ beliefs that the cereal was healthier, nor their intentions to request the cereal. Older children, however, reported higher preference for the brand over other cereals and food types. Younger children did not.

Overall, the results of studies concerning video game product placement generally have not been promising. The majority have reported only limited effects of placements in games on consumers. Some have demonstrated a positive relationship between product placement and brand awareness, though the two aforementioned investigations by Bambauer (2006) and Mallinckrodt and Mizerski (2007) suggest only limited effects for deeper consumer response outcomes. Further, much of this research possesses methodological limitations.

A weakness of almost all of these studies is that they represent laboratory-based experiments, which are exploratory in nature. They have tended to use small, non-random samples made up predominantly of men, even though women now represent a key gaming segment. Even Nelson’s (2002) research, the most frequently cited in the literature, is exploratory in nature and possesses methodological limitations. The most significant concerns the sample. Subjects were self-selected game players who responded to a flyer or university newspaper ad requesting their participation (Schneider and Cornwell’s, 2005 sampling procedure is also modelled on this). The sample size for Nelson’s (2002) first study was 20, consisting of 16 men and four women ranging in age from 18 to 25 years. Only ten of these respondents participated in the follow-up test to assess long-term recall. Further, the study suffers from selection bias as subjects were not randomly selected nor assigned to experimental groups. Instead they were allowed to play the game with whomever they chose to take with them, in groups of a maximum of three. The research therefore suffers from a lack of internal validity. The findings are also likely to be externally invalid, since the experiment was performed in a contrived setting.
Mallinckrodt and Mizerski’s (2007) study is noteworthy at this point, as it addresses many of the aforementioned weaknesses of prior research. They performed an experiment in school computer laboratories, which involved 294 children, 60% of whom were female. This however was not a random sample. Bambauer’s (2006) study is also a notable exception, since it involved a comparatively large sample of gamers (n=90) who participated in the experiment in a home lounge room. There are questions however surrounding Bambauer’s (2006) survey procedure. Since the study sought to test attitude change, respondents were questioned about their attitudes towards the brands immediately prior to the experiment and again following, approximately 15 minutes later. Bambauer (2006) himself recognises that the repeated measurement may have biased results. He also studied more heavy game users and a game which has a cult following. No measures were included to test prior exposure or attitudes toward the game, which may have biased responses. A final limitation of these existing studies is that insufficient attention has been given to the characteristics of games, which may mediate any desired effects stemming from placements. Grigorovici and Constantin (2004) studied presence, finding this has a detrimental effect on brand recall, recognition and preference. Bambauer (2006), on the other hand, found flow has a positive effect on attitude toward the game. Only one reported study, however, has examined the influence of both media context and psychological response on outcomes stemming from placements in games.

Nelson, Yaros and Keum (2006) examined the influence of playing versus watching a game and presence on consumer recall, game liking and perceived persuasion for brands (real and fictitious) in a computer racing game. They found that playing the game impeded recall, but had no effect on game liking or perceived persuasion. Real brands were recalled to a greater extent, however, than fictitious brands by both players and watchers, suggesting that brand familiarity has an influence. Finally, presence had no effect on recall of background brands, but it was positively related to game liking as well as perceived persuasion, and mediated the relationship between the two for real brands. The findings suggest that the presence stimulated from game play may have the potential to positively influence attitude toward a placed brand, but Nelson, Yaros and Keum (2006) did not study its direct influence on brand attitudes, only on perceived effectiveness. In other words, respondents
were asked to indicate how they believed the placements had affected their brand attitudes, by signaling their level of agreement with a single statement that read: ‘I feel more positive about [brand] after seeing it in the racing game’ (p 92). Also, Nelson, Yaros and Keum (2006) did not test for the perceived degree of interactivity, which represents a key determinant of presence (Coyle and Thorson, 2001). Their assumptions are therefore based on the experimental manipulation, not on participant perceptions.

The aforementioned studies offer only limited insights into the characteristics of games and their influence. Understanding the game medium however represents an important research priority, as games are distinctly different from other media which have traditionally carried placement messages.

2.6.2 Video Game Medium Characteristics and Psychological Responses
The manner in which people experience a media environment is an important issue. Each medium carries its own meanings and connotations, which are likely to change the nature of messages. Consider, for example, the case of using simulated placements in a game context; the nature of the placement message is dramatically changed due to the interactivity of the medium. As a result of media differences, it is likely then that consumers react to a medium in terms of its own particular set of meanings (Gould and Gupta, 2006). Indeed studies have demonstrated that media context can influence mental states and processing of commercial messages (Moorman, Neijens and Smit, 2002). It is therefore necessary to understand the technological characteristics of the medium and how people interact with this technology (Siekpe and Hernandez, 2006).

To date, the characteristics of video games have not been formally developed in the literature. Some attempts have been made to do this in the case of online games (see, for example, Sweetser and Wyeth, 2005), but exactly what makes games different from traditional media and the corresponding impact of these features on consumers’ psychological responses remains unclear. A review of the internet marketing literature however reveals several characteristics.
One of the most important dimensions that differentiates new media from traditional media is the level of realism they provide (Coyle and Thorson, 2001). This is the result of two key features: interactivity and vividness. Interactivity has been defined as ‘the degree to which two or more communication parties can act on each other, on the communication medium, and on the message, and the degree to which such influences are synchronised’ (Liu and Shrum, 2002: p54). It is a function of the different ways content in a mediated environment can be manipulated by users in real time, the speed of this manipulation, and mapping (the similarity between the controls and manipulation in the mediated environment and those in a real environment) (Steuer, 1992). Vividness is therefore important for interactivity and represents the second key characteristic that distinguishes video games from traditional media.

Vividness refers to the richness of a mediated environment and the way that environment presents information that engages the senses (Laurel, 1991; Naimark, 1990; Rheingold, 1991; Steuer, 1992). Vividness is increased by media tools such as video, audio, animation and 3D imaging, which are capable of enhancing the richness of the experience (Coyle and Thorson, 2001). The effects of vividness have been studied in the context of investigations concerning distinctiveness - a stimulus characteristic relative to other stimuli presented, or to a previously defined set of stimuli (Beattie and Mitchell, 1985).

Both vividness and interactivity represent attributes of the computer-mediated environment, which are capable of facilitating unique responses from users. First, when both interactivity and vividness are high in a computer-mediated communication, and an individual is sufficiently stimulated by the artificial environment, their experience can become direct (Nicovich, 2005). Direct and indirect experience refers to the level of familiarity and level of prior behaviour a consumer has had with an attitude object (Fazio and Zanna, 1981). To illustrate, test driving a vehicle provides a more direct experience than seeing the vehicle demonstrated on television, which in turn provides a more direct experience than hearing an advertisement for the vehicle on radio. It seems likely that direct experience will be facilitated in a video game context where players can use and interact with products (as is the case with use simulated placements).
Second, both interactivity and vividness are important determinants of presence (also called telepresence) (Coyle and Thorson, 2001; Laurel, 1991; Naimark, 1990; Rheingold, 1991; Steuer, 1992). Presence represents an individual’s mediated perception of an environment so that it is imagined as real (Lombard and Ditton, 1997). Induced by vividness, interactivity and focused attention (Lombard and Ditton, 1997), presence provides a feeling of being present in an environment and enables an individual to experience psychological states such as virtual experience (Hoffman and Novak, 1996; Li, Daugherty and Biocca, 2001). It has been suggested that playing a game can enhance a sense of presence (Lessiter et al., 2001), which may lead to stronger evaluations of advertising messages (Nicovich, 2005). It has been found to affect responses to placements in the game medium, as highlighted previously (Grigorovici and Constantin, 2004; Nelson, Yaros and Keum, 2006).

Presence is closely related to (and actually enhanced by) flow. Flow is a process of optimal experience accompanied by a loss of self-consciousness, which occurs as a result of a seamless sequence of responses facilitated by machine interactivity (Hoffman and Novak, 1996; Novak, Hoffman and Yung, 2000). It occurs when an interaction is fun and enjoyable (Csikszentmihalyi and LeFevre, 1989), the user focuses their attention on the interaction, and they perceive a balance between this challenge and their skills (Hoffman and Novak, 1996). Bambauer (2006) and Sweetser and Wyeth (2005) argue that flow is relevant in a game context. In fact, Bambauer (2006) found that the more intensively a gamer experiences flow, the more positively they evaluate the game. Sticky web sites which attract and hold visitors’ interest (such as gaming sites) (O’Guinn, Allen and Semenik, 2006) can also promote a flow state (Bhat, Bevans and Sengupta, 2002; Hamman, 2000).

Finally, unlike with traditional media where the audience are passive message receivers, in interactive environments the audience is engaged in the communication process. It is this engagement that can help facilitate a state of flow. Players and observers commonly report deep involvement with games (Johnson and Wiles, 2003), which may be so deep that they become less aware of their surroundings and the passing of time (Brown and Cairns, 2004). This immersion is a psychological state that may represent the essence of experiencing presence (Tamborini, 2000) and
is an outcome of the medium’s ability to focus users’ attention (Witmer and Singer, 1998).

It is apparent that games possess key characteristics, namely interactivity and vividness, which distinguish them from traditional media. In fact, some authors consider interactivity to be the most important characteristic of games (see, for example, Grodal, 2000; Vorderer, 2000). Interactivity and vividness can facilitate several outcomes including direct experience, presence, flow, engagement and immersion. There is a growing body of work which has examined the influence of these outcomes on consumers, mostly in the online environment.

Interactivity has been found to be a strong predictor of attitudes towards web sites (Jee and Lee, 2002; McMillan, Hwang and Lee, 2003; Thorson and Rodgers, 2006; Wu, 1999), as has vividness (Coyle and Thorson, 2001; Steuer, 1992; Stevenson, Bruner and Kumar, 2000). Vivid stimuli (such as material which is colourful, concrete and/ or image provoking) have been found to lead to superior recall (Shoemaker, 1996; Taylor and Thompson, 1982), as well as increased persuasion (Fiske and Taylor, 1991; Reyes, Thompson and Bower, 1980; Wright and Rip, 1981). Studies of media tools which increase vividness have also generally produced positive results. Animation and 3D advertising, for example, have been found to facilitate recall (Li and Bukovac, 1999) and attract attention (Cleland and Carmichael, 1997; Li, Daugherty and Biocca, 2001, 2002; O'Connor, 1997).

The psychological responses to interactivity and vividness such as direct experience, presence, flow and engagement have also been studied in an online context. In most cases, they have been found to positively influence consumers, including their awareness, attitudes and behaviour. Li, Daugherty and Biocca (2003), for example, demonstrated that virtual product experiences can lead to more positive and confidently held brand attitudes than those engendered by traditional communications such as advertising. Further, presence on the internet has been found to not only mediate and enhance attitudes towards the brand, but also brand recall and purchase intentions (Edwards and Gangadharbatla, 2001; Li, Daugherty and Biocca, 2002). It can also increase affect and arousal (Anderson and Bushman, 2001; Dillon et al., 2000, 2001; Huang and Alessi, 2001; Meehan, 2000; Pugnetti,
Meehan and Mendoza, 2001). Finally, flow has been found to result in a perceived sense of control, increased learning, exploratory and participatory behaviours (Hoffman and Novak, 1996), increased brand preference (Kim and Biocca, 1997), as well as positive subjective experiences and attitudes (Novak, Hoffman and Yung, 2000).

Overall, there has been much research performed that demonstrates positive outcomes stemming from the consequences of interactive media use. Several studies highlight, however, some potential limitations for advertising effectiveness. Research of direct experience in an offline context, for example, has found a positive affect on consumer attitudes, but under a condition of high motivation (Aaker, Stayman and Hagerty, 1989; Fazio and Zanna, 1981; Holman, 1984; MacInnis and Price, 1987). Further, it has been suggested that media which produce presence can result in stronger attitude formation (Coyle and Thorson, 2001), though presence may not necessarily influence brand attitudes directly (Bambauer, 2006). Media tools that facilitate presence can also distract consumers from other activities (Albright, 2000; Fairburn 1999; Zeff and Aronson, 1997). Similarly, flow too can be distracting. When in this state, an individual can become so involved in navigation they become unaware of other things around them, losing their sense of time and place (Hoffman and Novak, 1996). It is apparent then that these are complex constructs, which may not necessarily always result in positive outcomes.

Although it has been assumed that interactivity is the greatest advantage games offer as a medium for marketing messages (McChesney and Bellamy Foster, 2003), its corresponding influence on consumers may also present unique challenges. It has been suggested that media possessing the aforementioned characteristics are able to deliver messages which are more adept at attracting attention, influencing attitudes (Kiani, 1998) and creating an image for an organisation (Hoffman and Novak, 1996). Whether this is the case for games remains unknown. Further, it is not yet clear whether the aforementioned constructs have the potential to affect the influence of placements in the game medium on users.
2.7 Summary

In the preceding sections, the concept of product placement has been introduced, with attention given to the difficulty in defining this promotional form. It has also been highlighted that despite the growing use of product placement, there has been little academic work to investigate its effects in the context of consumer behaviour. There is controversy surrounding the practice and much speculation concerning its influence, but an absence of scientific evidence as to how this form of marketing communication actually affects people. There is no clear evidence of its behavioural impact, no established measure to assess its persuasiveness, no official standards for measuring effectiveness, and no measures to assess the cost-benefit trade-off. As the use of product placement continues to grow, it has been highlighted further research regarding its effects is greatly needed.

A key focus in the literature has been on the ability of product placement to influence brand awareness, with recall and recognition measures being used by both marketing academics and industry practitioners to evaluate effectiveness (industry trends concerning this issue were presented in Chapter 1). It was highlighted earlier, however, that different measures aside from brand memory are needed to ascertain effects. This is particularly true since product placement is often pursued as a strategy not only to increase brand awareness, but also to positively influence attitude to the brand and organisation (corporate image), as well as purchase intention and behaviour. The discussion highlights that when these are the goals, using recall and recognition as measures of effectiveness is inappropriate.

Games have emerged as a new medium which is being explored for product placement messages, but like in the case of traditional media, empirical research concerning effects is lacking. Further, where empirical studies of video game product placement have been conducted, there has again been an over-emphasis on brand awareness outcomes. Aside from the studies of Bambauer (2006), Mallinckrodt and Mizerski (2007), and Nelson, Yaros and Keum (2006), no empirical tests of a game’s effects beyond memory of placed brands have been reported in the literature. As an emerging area representing only five years of research, this focus on is not surprising, but it offers only limited insights into the
value of the strategy. It also means there is an inadequate foundation to serve as the basis for strategy decisions, which poses a risk to marketing success. Further compounding the problem is that the unique characteristics of games and of placements in this medium (highlighted in the preceding section) makes it difficult to apply existing literature to this context and draw any definitive conclusions.

To build on the existing body of literature and fill a gap concerning the influence of placements in games, the current research seeks to understand more completely the relationship between game placements and attitudes. A review of the literature reveals it is premature to consider the influence of product placement in games on purchase behaviour, as no academic work has been performed in this area, and there are insufficient empirical investigations of memory and attitude effects. If one accepts Keller’s (2003) view that it is attitudes that guide behaviour, then it is pertinent to first consider attitudinal responses. This includes both attitude toward the brand and organisation. Despite the similarity between the two constructs, not a single published study has investigated corporate image in the product placement domain. The current study therefore addresses the following research question:

*What is the effect of brand and product placements in games on the consumer’s response in terms of attitude to the brand and corporate image of the brand manufacturer?*

The next part of this chapter introduces the focal theory for the current research. It commences with an overview of attitudinal models, which offer insights into the processes by which attitudes are formed.

### 2.8 Introduction to Focal Theory

The first part of Chapter 2 (with some supporting information presented in Chapter 1) outlined the trends, research and literature concerning product placement in traditional media, and introduced games as another medium used for the strategy. As part of the background theory presented, research concerning video game product placement was also discussed. One key outcome of the literature review thus far, has been the recognition that this area is under-explored, yet a deeper understanding is
critical for the proper use of this promotional form. The focus of this thesis is on gaining an understanding of the strategy’s attitudinal impact.

The following section begins by introducing several attitudinal models, which depict a range of factors that influence the attitude formation process. The discussion concerning one of these models is extended in Chapter 3 to make predictions concerning the effects of placements in video games.

2.8.1 Attitudinal Models
There is an abundance of concepts that have been explored and theories used to describe, understand and predict the attitudinal responses of consumers to marketing messages, particularly advertising. From the hierarchy of effects model (Colley, 1961; Lavidge and Steiner, 1961) to multi-attribute attitude models (Fishbein and Ajzen, 1975; Holbrook, 1978; Lutz, 1975) and classical conditioning (Bierly, McSweeney and Vannieuwkerk, 1985; Gorn, 1982; Stuart, Shimp and Engel, 1987), a number of major theories of attitudes and attitude change processes have developed over the last half-century (for a complete review see Petty and Cacioppo, 1981; Petty, Unnava and Strathman, 1991).

Perhaps one of the most prominent models in the literature is Petty and Cacioppo’s (1983) two routes to persuasion, or Elaboration Likelihood Model (hereafter, ELM), depicted in Figure 2.3. It should be noted that Greenwald and Leavitt (1984) subsequently built on this model, though this work has received criticism (see, for example, Park and Mittal, 1985).
occurs when a consumer’s processing motivation, opportunity and ability are high. In this instance, the consumer has the necessary resources to focus on and interpret product messages, form beliefs about product attributes and consequences, and integrate these meanings to form brand attitudes and intentions (Petty and Cacioppo, 1983). The peripheral route, on the other hand, occurs when consumers lack the motivation, opportunity and/or ability to evaluate an ad/brand. In this processing mode, consumers may instead consciously or unconsciously associate the message with contextual cues (Singh and Hitchon, 1989).

Recent work in the product placement domain proposes that placements may be processed the same way. Balasubramanian, Karrh and Patwardhan (2006) propose a conceptual framework, which depicts the aforementioned constructs in describing how placements may work (illustrated in Figure 2.4). Their integrative model incorporates both stimulus- and individual-level variables, as well as outcomes. They propose that execution (setting) variables and individual variables affect the depth of placement processing, which in turn determines placement effects including cognitive, affective and conative outcomes.
Understanding consumer responses is a complicated process, because there is no single mechanism by which persuasion occurs and there are a number of variables which can moderate the advertisement-attitude relationship. In recognising this complexity and the myriad of factors that can influence brand attitudes and the way they formed, MacInnis and Jaworski (1989) developed an integrative model of brand

<table>
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<tr>
<th>Execution Factors (Stimuli-based)</th>
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<tr>
<td>- program type/program-induced mood</td>
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<td>- execution flexibility</td>
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<td>- opportunity to process the placement</td>
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<td>- placement modality</td>
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<td>- priming of brand appearance</td>
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<tr>
<td>- type and amount of brand information presented</td>
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<tr>
<td>- strength of link between brand/product and a) story character, b) editorial content/story, c) vehicle and d) medium</td>
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<th>Individual-Difference Factors</th>
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<tr>
<td>- familiarity/ethicality (strength of link between brand/product and individual)</td>
</tr>
<tr>
<td>- judgment of placement fit, appropriateness, relatedness - strength of link between individual and a) story character, b) editorial content/story, c) vehicle and d) medium</td>
</tr>
<tr>
<td>- scepticism toward advertising</td>
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<tr>
<td>- attitude toward placement in general</td>
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<tr>
<td>- program involvement/program connectedness/motivation to process brand information</td>
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<tr>
<th>Processing Type/Context/Setting</th>
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<tr>
<td>Less conscious, moderately conscious, highly conscious (implicit vs explicit memory implications for recall and choice)</td>
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<th>Effect(s) From Placement</th>
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<tr>
<td>Cognition:</td>
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<tr>
<td>- brand typicality/incidence</td>
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<tr>
<td>- placement recognition</td>
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<td>- brand salience</td>
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<td>- placement recall</td>
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<tr>
<td>Affect:</td>
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<tr>
<td>- brand portrayal rating</td>
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<tr>
<td>- identification with story character, traits</td>
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<td>- identification with brand/imitation</td>
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<tr>
<td>- brand attitude</td>
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<tr>
<td>Conation:</td>
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<tr>
<td>- purchase intention</td>
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<tr>
<td>- brand choice</td>
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<td>- brand usage behaviour</td>
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Source: Balasubramanian, Karrh and Patwardhan, 2006
attitude formation processes, as depicted diagrammatically at Figure 2.5. This integrative approach advances the work of Petty and Cacioppo’s (1983; 1986a,b) two routes to persuasion model.

**Figure 2.5 Integrative Attitude Formation Model**

![Integrative Attitude Formation Model Diagram]

Source: MacInnis and Jaworski, 1989

MacInnis and Jaworski’s (1989) model provides a framework for understanding information processing by recognising the nature and elements of processing, and the moderating impact of an individual’s characteristics in attitude development. It also incorporates the two attitude components of emotions and cognition in explaining attitude formation. The basic constructs depicted include needs; motivation, ability and opportunity (as per the Petty and Cacioppo model); constructs relating to information processing such as attention, capacity, and levels of processing; cognitive and emotional responses; attitude formation processes; and brand attitudes. The model provides a useful framework for considering product placement in games and its ability to influence brand attitudes and corporate image. It represents the
focal model in this thesis due to its prominence in the literature and comprehensiveness. The aforementioned models are treated as complementary, rather than competing theoretical perspectives, for enhancing understanding of placements in games.

### 2.8.2 Overview of the Integrative Attitude Formation Model

MacInnis and Jaworski’s (1989) integrative attitude formation model is based on the premise that information processing is an important precursor to attitude change and persuasion. This has been proven in a multitude of studies and argued in a number of other academic works over the past six decades (see, for example, Batra and Ray, 1986a; Bauer, 1958; Cacioppo, Harkins and Petty, 1981; Greenwald and Leavitt, 1984; Klapper, 1960; Krugman, 1965; Petty and Cacioppo, 1983, 1986a,b; Shapiro, MacInnis and Park, 2002). Even in the context of product placement, information processing and depth of processing have been recognised as important in predicting message effects (Balasubramanian, Karrh and Patwardhan, 2006). The MacInnis and Jaworski (1989) model holds that activated needs stimulate processing motivation, and it is this motivation, moderated by opportunity and ability, that plays an important role in information processing. In fact, it affects the direction of attention and processing capacity (Mitchell, 1981; Petty and Cacioppo, 1986a,b). According to the model, this processing in turn influences the type of response generated from exposure to an ad stimulus, which can be either cognitive or emotional. These responses and other factors therefore determine the process of attitude formation and ultimately brand attitudes.

The MacInnis and Jaworski (1989) framework highlights that information processing is the result of a complex relationship between several factors. First and foremost, motivation has a determining influence on attitude formation, as it affects the direction of an individual’s attention and the intensity of their information processing (Mitchell, 1981; Petty and Cacioppo, 1986a,b). When motivation is strong, consumers are more likely to focus attention on brand-relevant ad information and process it deeply (Mitchell, 1981, 1983). As a consequence, cognitive and emotional responses will contribute to the formation of brand attitudes, which are suggested to be more stable and more confidently held than those formed when processing motivation is lower (Petty and Cacioppo, 1986a,b; Park and Mittal, 1985).
influence of motivation on the attitude formation process, however, is not as simplistic as it may seem, because the antecedents of opportunity and ability moderate the impact of motivation on attention and processing capacity. Therefore, whether an individual attends to and processes a message depends not only on their motivation level, but also whether they have sufficient opportunity and ability (Shimp, 2000). When all three conditions are high, attitude change is most likely.

The previous discussion indicates that the influence of placements in games on attitudes will depend on three factors: the motivation of gamers to process placement messages, the opportunity available for this processing and ability. These constructs are explored further in Chapter 3.

2.9 Conclusion

Product placement in video games has received little academic attention, but with the increased use of games as a marketing communications medium, finding answers to the questions concerning the effects of this promotional form has become an important task. As trends in the marketplace further encourage game use for marketing activities, practitioners are in need of information to justify their product placement strategies and related marketing expenditure.

This chapter has examined the literature, both empirical and theoretical, regarding product placement and has drawn on research from related disciplines to identify associated issues. It has been established that product placement is a unique element of the marketing communications mix and that games as a medium for product placement also possess unique characteristics. Despite its differences however, product placement in games is pursued as a strategy to favourably influence consumer behaviour. A review of the literature has revealed two constructs of particular relevance in this context, brand attitudes and corporate image. The current chapter has justified the need to examine the ability of product placement in games to achieve these attitudinal objectives. Research has emerged in the area of memory effects, but attitudes have largely been ignored to date.
An absence of product placement research, particularly in games, necessitates a reliance on literature from related areas to make predictions concerning effects. Earlier, product placement in games was positioned within the parent discipline of marketing communications, where it was recognised that the strategy does share similarities with other promotional forms, namely advertising, sponsorship and interactive marketing. As portrayed in Figure 2.1 at the beginning of this chapter, literature in these areas provides a foundation to gain insights into how video game product placement may influence gamers. Specifically, the advertising literature offers a foundation to understand brand attitudes. This is the primary field providing the basis for the development of most attitudinal models, including MacInnis and Jaworski’s (1989) framework. The sponsorship literature has relevance for understanding corporate image. Much work has been done to investigate the effects of sponsorship on this construct. Owing to the similarities video games share with the internet, a discussion of the internet marketing literature is also warranted to understand the characteristics of games and their possible effects. The amalgamation of work performed in these areas helps to understand how video game product placement might operate, and allows for hypotheses to be developed later in Chapter 3.

The following chapter presents details of a pilot study designed to gain preliminary insights into the effects of placements in video games on brand attitude and corporate image. It outlines the research method employed to test the relationship among several variables identified in the related literature. A review of the findings from this research leads to the development of hypotheses, which are tested as part of an extended study in Chapter 4. Figure 2.6 illustrates diagrammatically the process undertaken in developing and conducting this research, with particular attention given to the pilot study, which is presented next.
Figure 2.6 Summary of the Research Process

- Identification of research question and justification for the research: Chapter 1
- Literature review: Chapter 2
- Pilot study: Chapter 3
- Selection of research design: Quantitative using experimental design
- Determine data collection method: Self-administered questionnaires
- Design of survey instrument: Experimental groups and control group
- Sampling plan: Central location intercept, random split
- Data collection: Central location
- Data entry
- Data screening: Data examination, missing values, outliers
- Data analysis: ANOVA, ANCOVA
- Interpretation of results: Development of hypotheses
- Main study: Chapter 4
- Overall findings and conclusions: Chapter 5

Source: Adapted from Churchill and Brown, 2004
3.0 PILOT STUDY

3.1 Introduction

Study one investigates the relationship between video game product placement, and brand attitudes and corporate image. It addresses the research question:

What is the effect of brand and product placements in video games on the consumer’s response in terms of attitude to the brand and corporate image of the brand manufacturer?

The study builds on existing research in the area of product placement and memory effects, and fills a gap in the literature regarding the potential for product placement to facilitate deeper consumer responses. Specifically, the research investigates this potential in the context of video games, an area that has largely been neglected in academic studies to date. The findings of this study provide evidence that will aid in the development of hypotheses concerning attitudinal effects, which can then be tested as part of field research (presented in Chapter 4).

The previous chapter reviewed the current literature and research regarding product placement in traditional media such as film and television, as well as in games. One key aim of placing branded products into electronic games is to influence attitudes, but these effects are yet to be validated. Many of the predictions regarding the impact of placed brands rely on speculation or theoretical hypotheses, not on real data. Furthermore, it is assumed that the same effects observed in traditional media will be evident, but as detailed in Chapter 2, the game medium possesses different characteristics. There is the risk that the effects found for product placement may be redundant in a game context, simply because the medium characteristics are so vastly different. Playing a game provides a more real experience, so there are also certain limitations in applying existing literature regarding advertising and sponsorship effects to this context.

To make predictions concerning how placements in games may operate and whether they may influence brand attitudes and corporate image, this chapter commences with a discussion of the Integrative Attitude Formation Model (introduced in Chapter
2) to identify constructs worthy of investigation in a preliminary study. It presents the method used for testing these variables, including details of the research design, treatment of variables, sampling plan, data collection and data analysis methods (details concerning the research methodology were presented in Chapter 1). The results of the data analysis are also outlined, along with a discussion of the findings. This then leads to the development of hypotheses for study two.

3.2 How Placements in Games May Operate

To understand how placements in video games may operate, it is useful to consider the integrative attitude formation model (MacInnis and Jaworski, 1989). This framework identifies a number of factors that play an important role in information processing and subsequently attitude formation. The first of these factors is motivation.

Motivation represents an individual’s desire or readiness to process brand information from an ad (MacInnis, Moorman and Jaworski, 1991). In other words, a highly motivated individual is one who is willing to allocate processing resources to ad information. Some researchers have defined motivation as the personal relevance of a message to an audience (see, for example, Batra and Ray, 1985, 1986b), however personal relevance represents an antecedent which should increase processing motivation (MacInnis, Moorman and Jaworski, 1991); it does not represent the motivation construct itself. A better definition is ‘desire to process’, which is influenced by a range of situational circumstances, as well as consumer characteristics.

Individual goals in information processing affect how viewers evaluate information, with this activeness of the audience being dependent on their motives (or their goal-directed arousal) (Park and Mittal, 1985). It has been argued that motivation levels and subsequent processing activities are determined by one’s media orientation. Windahl (1981), for example, proposes that consumers use media differently, which can produce different effects and consequences. He identifies two types of media orientations, instrumental and ritualistic, the existence of which has been supported

Instrumental media use is active and purposive and refers to an individual who is involved and seeking certain media content for informational purposes (they possess extrinsic motivation and are ‘goal directed’) (Hoffman and Novak, 1996; Rubin, 1994). Ritualistic media use, on the other hand, occurs when an individual is in a less active or goal-directed state and uses a medium more habitually for diversion and time consumption (they possess intrinsic motivation and are an ‘experiential viewer’) (Davis, Bagozzi and Warshaw, 1992; Hoffman and Novak, 1996). The difference between the two orientations is in terms of the direction of attention. In the case of an instrumental viewer, the selective aspect of their attention is directed to need-relevant stimuli (Rubin, 1994; MacInnis and Jaworski, 1989), whereas a ritualistic viewer pays attention to whatever information is interesting (Hoffman and Novak, 1996). As a result, an instrumental viewer focuses on the meaning of a stimulus and processes it at a semantic level, because they receive greater exposure to the message (Craik and Tulving, 1975; Rubin, 1994). This involves the use of deeper cognitive processes and facilitates the formation of more linkages in memory between the message components and other stored concepts (Anderson and Reder, 1979). It is therefore more likely to lead to changes in, and the formation of, stronger brand attitudes (Mitchell, 1983). A ritualistic viewer, however, focuses on the appearance of the stimulus and processes it at a structural level (also referred to as sensory analysis). They receive greater exposure to the medium, because their focus is on this as opposed to the content (Rubin, 1994).

It is apparent then that the ‘state’ of an individual when exposed to an advertisement, or some other form of brand information, can influence how that information is processed. Considering the relationship between media use and brand attitude formation highlighted in the advertising literature, the effect of placements in games may depend on the individual, the way they use games and their corresponding motivation. The media orientations presented may therefore have relevance for two different types of video gamers, players and observers.
Video game play is often a social activity that involves multiple individuals (ESA, 2004a). In a video game, a player may be an instrumental viewer, engaging in activities that are instrumental to achieving a valued outcome: winning the game. As such, they may be motivated to process brand information that is relevant to this pursuit (for example, information concerning the vehicles in a car racing game). Their attention could be focused through their involvement in the video game. In the case of a game play observer, it is likely they would be a ritualistic viewer. With a lack of involvement, their attention and comprehension effort may not be as focused as that of a player. They may therefore only attend to the appearance of the game, rather than deeply processing any brand information contained within it. As a result, the attitudinal effects may be different for these two groups. Nelson, Yaros and Keum (2006) found brand recall to differ between players and observers, though in this instance, playing a computer game impeded the recall of placed brands.

The previous discussion implies a neat categorisation of video gamers into two groups (players and observers), which will dictate their level of motivation and information processing. It should be recognised however that background, time and situational demands can lead to variations in audience activity (Rubin, 1984). A viewer may therefore switch between instrumental and ritual viewing behaviour, similar to web users switching modes between information-seeker and web-surfer (Li and Bukovac, 1999). In the case of a video game, this switch would be likely to occur following one game session (for example, after one car race has been completed), whereby the player would share the controller with an observer, thus allowing them an opportunity to play. This suggests that in a video game context, movement between the different modes would not be such a fluid process, as is the case on the internet. Distinct differences may therefore be evident.

It is necessary to acknowledge the existence of a variety of factors that can influence motivation and subsequently the formation of attitudes both towards a brand and an organisation. As depicted in Figure 2.5, opportunity is one antecedent that moderates the relationship between motivation and information processing. Opportunity refers to the extent to which limited exposure time or distractions affect an individual’s attention to brand information in an ad (MacInnis, Moorman and Jaworski, 1991). It can be reduced as a result of a host of factors, including those
relating to the ad (or in this case, the product placement). Ad factors are capable of impeding the encoding process and the time allocated to processing brand information (MacInnis and Jaworski, 1989).

In the context of a game, it is possible that not all types of placements will provide the same levels of opportunity for information processing. Indeed, differences have been noted in the effects of different types of placements in traditional media (Brennan, Dubas and Babin, 1999; Gupta and Lord, 1998; McCarty, 2004; Sheehan and Guo, 2005; Yang, 2004), as well as in games (Grigorovici and Constantin, 2004; Kuhn, Pope and Voges, 2007; Nelson, 2002; Schneider and Cornwell, 2005). This is an important issue for practitioners in terms of how the characteristics of different placements may impact on consumers (d’Astous and Chartier, 2000). Product placement was recognised earlier, in section 2.4.2, as being able to be classified along a number of different dimensions. The two most common forms in games are use simulated product placements and visual brand placements.

Peripheral brand messages may not present such a high opportunity for information processing as in the case of products simulated in use. With visual placements, lower opportunity may produce a condition for only limited processing. Under conditions of low opportunity, mere exposure can still result in attitude change (in accordance with the mere-exposure effect), but greater change is afforded by extensive processing facilitated by higher opportunity (Olson and Thjømøe, 2003). It is likely opportunity would be higher if a product is simulated in use since the brand is more prominent, therefore this type of placement could have a stronger effect on attitudes towards the brand and the manufacturer. Product usage is considered to be an important characteristic for enhancing placement effectiveness. In a game, not only can a brand be shown in use, which practitioners believe is important for success (Karrh, McKee and Pardun, 2003), it can actually be used by a player. In Nelson’s (2002) study, this brand usage was found to be important for recall superiority, so it may also be important for attitudes. Likewise, prominence has been found to be important for brand recall (Grigorovici and Constantin, 2004; Schneider and Cornwell, 2005). If processing opportunity differs depending on the type of placement, and opportunity can affect attitude formation, then it is necessary
to consider these two distinct types of placements in a video game context and their possible effects.

Like opportunity, ability moderates the impact of motivation on attention and processing capacity (Greenwald and Leavitt, 1984), and represents a consumer’s skills or proficiency in interpreting brand information (MacInnis, Moorman and Jaworski, 1991). In order for a condition of high ability to exist, prior knowledge must be present, and an individual must possess a level of education and intelligence to be capable of accessing it (Alba and Hutchinson, 1987; Anderson and Jolson, 1980; MacKenzie, 1986; Sujan, 1985). An individual’s product involvement therefore has an important role, because if an individual is familiar with a product, they are more capable of information processing.

Involvement is a critical determinant of the extent and form of persuasion, or the extent to which an individual will accept some belief or attitude (Reardon, 1990). Product involvement refers to the personal relevance of a particular communication (Reardon, 1990; Zaichkowsky, 1994). When a product is relevant for an individual (perhaps due to a need they possess) and that individual has a strong interest in it, they are generally more motivated and able to process the message (because they are involved in its subject matter) (Lardinoit and Derbaix, 2001; Shimp, 2000). As a result, they will direct attention to ad information. Therefore, in the context of a game, if a placed brand or product is of interest to a gamer and they possess knowledge about it, they are more likely to become involved in the message and have the ability to process it. The fact that such products can be used within the medium may also serve a reinforcing function for product involvement and enhance product knowledge. An uninvolved individual, on the other hand, would be likely to pay only minimal attention to the same message, though this may not always be the case.

Sometimes stimuli contain properties that can elicit attention automatically (Berlyne, 1960), and thereby encourage message involvement. Stimulus determinants such as the size, colour, intensity, contrast, position, directionality, movement, isolation, novelty and attractiveness of the message and its parts (Kaufman-Scarborough, 2001) can therefore attract attention and increase processing motivation. In such an
instance, an individual becomes involved in an ad due to its characteristics, not because they are involved in its content, such as the product. This attracts their attention and increases processing motivation.

With advertising product involvement the focus is on the content of communication, whereas with advertising execution involvement a viewer processes the ad context (for example, source and executional characteristics) (Baker and Lutz, 1987). These ad elements are processed to the extent that they are relevant to brand evaluation (MacInnis and Jaworski, 1989). As a result of these two different types of involvement, cognitive effort is directed to two different elements of the stimulus. When involvement with both the message and its execution are strong, simultaneous brand and ad evaluations may occur, leading to greater attitude change (Olson and Thjømøe, 2003).

Based on the preceding discussion of the advertising literature, ability to process brand information is dependent on an individual’s involvement with message execution, and with the brand or product that represents the focal point of that message. Therefore, if an individual is involved with both a product placed in a game and with the game itself (and thereby the execution of the product placement message for that brand), processing ability and motivation could be higher, and hence the greater the propensity for attitude change associated with the brand and its manufacturer. Nelson (2002) demonstrated that when a brand is a major part of game play, the consumer is actively involved and the brand is relevant, recall is enhanced, so it is possible attitudes too may be positively affected. Involvement with the game is likely to occur as a result of its interactive dimension, but involvement with a product category may act as a confound in any main effects of product placement on attitudes towards the brand and its manufacturer.

One final factor likely to have an influence on the relationship between product placement in games and attitudes is skill level. The issue of skill is particularly relevant to a video game player. An individual engaged in a goal directed activity (such as a game player) requires greater technical skills than an individual engaged in experiential behaviour (such as an observer). These technical skills are required if the individual is to be successful in winning a game. When an individual’s skills are
strong in an interactive environment they have high self-confidence and, as a result, more favourable attitudes toward the medium (Gardner, Dukes and Discenza, 1993). Skill level may also generate emotional responses capable of influencing processing motivation (Arnold, 1960; De Rivera, 1984; Izard, 1977). Finally, skill level is likely to affect processing opportunity and ability.

Video games have high range whereby they offer many possibilities for action at any given time (Steuer, 1992). In this mediated environment, users require a high level of skills, concentration and control if they are to successfully carry out many activities simultaneously. Where skills are weak, however, an individual may be distracted from brand processing activities as they struggle to fulfil game playing tasks. Their resulting immersion in the game may also mean they lack the cognitive capacity for processing to occur. When an individual is absorbed by an activity, they are unlikely to have excess energy to process anything other than the activity (Csikszentmihalyi, 1990). Skill level is therefore recognised as a potential confound that may influence attitudinal responses to video game placements.

3.2.1 Summary
A review of the integrative attitude formation model (MacInnis and Jaworski, 1989) and corresponding advertising, interactive marketing and sponsorship literature reveals that the potential for game placements to influence brand attitudes and corporate image may depend on a number of factors. It appears that game players and observers may respond differently to messages in games, and that the type of placement may determine any effects on brand attitude and corporate image ratings. It is also suggested that an individual’s involvement with a product and the skill level of the player may mediate any desired effects. These variables and the relationships between them are explored in the current preliminary study. This then facilitates the development of hypotheses for study two.

3.3 Method
The following section describes how study one was conducted. It provides details of the research design, operationalisation of variables, sample and administration of the survey instrument. Justification for the research method is also presented.
3.3.1 Research Design

As discussed in Chapter 1, the research question necessitated the performance of explanatory research, specifically an experiment. A laboratory experiment was identified as most appropriate for the pilot study. This investigation aims to uncover the psychological processes associated with product placement in games, so the need to maximise internal validity was paramount. A laboratory setting was therefore necessary.

The advantage of this type of experiment is that it provides high internal validity, as it allows the researcher to eliminate alternative explanations and isolate the major cause of a specific effect. Wells (1993) highlights the use of a laboratory setting is the best way to separate the cause from the effect. The researcher has a high degree of control over the experimental manipulations, because the environment is carefully monitored. It is also likely the experiment will produce the same results if repeated with similar subjects. Such a setting for study one therefore allowed for a more complex research design, where test subjects and the environment could be controlled. Steps were taken however to increase external validity, which are outlined in section 3.3.2.1.

The current research study employed an experimental design, specifically a post-test-only, three group design as depicted diagrammatically at Figure 3.1 and discussed in the following sections. A true experimental design affords the greatest level of control (Malhotra et al., 2004) and is one of the most frequently used to measure attitude change, although generally a pre-test measure is included as well (Petty and Cacioppo, 1981).
The pre-test/ post-test three group design is a variation of the aforementioned design which could have been employed in this study. Using a pre-test allows for more precise measurement of the effect of the treatment, but it can also sensitise participants and bias post-test responses (Bryman, 2004; Christensen, 1997; Zikmund and Babin, 2007). Measurement of the dependent variables both prior to and after exposure to the independent variable can therefore threaten the validity of an experiment. This represents the major limitation of the only other study to investigate the effect of game placements on brand attitudes, conducted by Bambauer (2006) (discussed at section 2.6.1).

A pre-test was not included in the current study for several reasons. First, the experimental design adopted addresses the limitations of Bambauer’s research and is consistent with other product placement studies, which have sought to understand the impact of placements using only post-test measures (see, for example, Mallinckrodt and Mizerski, 2007; Nelson, Yaros and Keum, 2006; Russell and Stern, 2006). Second, employing a post-test only design increased internal validity. The covert nature of product placement brings into question its ability to persuade, which was a key focus. Testing attitudes and corporate image of the brands prior to video game play would have alerted subjects to the brands of interest and may have caused them to allocate increased attention to them as part of the experiment. Even if different brands had been selected for a pre-test, subjects would have still been sensitised to the existence of product placement itself. Finally, the current study did
not seek to measure attitude change within a particular group, in which case a pre-
test would have been imperative. Rather, it sought to understand the attitudinal
effect of game placements, and therefore included a control group to measure
differences between groups. This negated the need for a pre-test.

Three groups were included for this research: video game play, video game
observation and control (no game). While some studies of product placement in film
and television have included a control group, which is exposed to a stimulus without
placements (see, for example, Auty and Lewis, 2004a), the control group in the
current study was not exposed to any game. An appropriate game free from product
placement could not be found, nor could a game be created due to resource
constraints. Further, such an experimental manipulation would have necessitated the
use of a Solomon four-group test, which is more expensive to execute and difficult to
control (Hair, Bush and Ortinau, 2000). Finally, the design is supported by other
product placement studies reported in the literature (see, for example, Sheehan and
Guo, 2005), including those involving games (see, for example, Mallinckrodt and
Mizerski, 2007; Yang et al., 2006), which have had a control group, no stimulus
condition. In order to test for any game effect and eliminate game stimulation, a
placebo brand was included (discussed at section 3.3.2.1).

Subjects were randomly assigned to one of the three groups. Randomisation was
essential for the effectiveness of the experimental design and allowed for causal
inferences about video game product placement to later be drawn. Matching is
another method that could have been used to achieve comparable groups (Neuman,
2006), but was rejected for this study due to the complexity and difficulty in
effectively executing the process. The process involves matching subjects on a
number of characteristics and then assigning one to a control group and the other to
the experimental group. It is difficult, however, to identify in advance which
characteristics are relevant and how many should be used (Hair, Bush and Ortinau,
2000). Often the literature can serve as a guide (Graziano and Raulin, 1997), but an
absence of video game product placement research meant critical variables on which
to match could not be identified for this study.
Measurement of the dependent variables was taken using a survey instrument, which incorporated pre-existing scales. Consideration was given to the characteristics of the sample and guidelines offered in the literature to develop an instrument that would minimise the potential for response error and maximise survey validity. Further details of the survey instrument and its administration are presented at sections 3.3.4 and 3.3.5. The approach to survey design was presented in Chapter 1.

3.3.2 Treatment of Variables
The independent variable in the current study was video game product placement. Two types were examined: products placed in the video game so that they are simulated in use, and those placed peripherally in the background. A video game featuring these placements represented the stimulus, which was directed at two treatment groups. A control group was also included, but was not exposed to the stimulus. Response to the stimulus was measured by the two dependent variables of attitude to the brand and corporate image of the brand manufacturer. Based on a review of the literature performed in section 3.2, it was identified that consumer response may be dependent on whether the gamer is a player or an observer, and influenced by an individual’s involvement and a player’s skill level. Involvement with the product category, and skill level were identified as potential confounding variables that could affect the dependent. The following section presents details of the stimulus for this study and reasons for the various decisions associated with its selection and use. Explanation of how the other variables were operationalised is also provided.

3.3.2.1 Independent Variables and Stimuli
A number of decisions were required with regards to the stimulus. The first related to the game platform to be used.

The game platform: The focus of the current research is on console systems, hence this was the platform selected for presentation of the stimulus. With this selection the internal validity of the experiment was enhanced, because unlike in the case of arcade or online games, greater control over the environment and extraneous variables was afforded. The trade literature and industry reports illustrate that consoles are a key games segment that overshadows other platforms (discussed in
Consoles represent the dominant platform for video game play, they have demonstrated stronger growth than computer or handheld games, and marketing in console games is far more advanced than in the other platforms (Taub, 2004; Williams, 2002). This suggests console games would be of most interest to marketers.

Sony PlayStation remains the market leader, but it was not selected as the platform for video game play in study one. There was much hype in the market surrounding the new PlayStation 3 console, released in Australia in March 2007 (Moffett and Wingfield, 2006; Sony, 2006). This represented an extraneous variable beyond the control of the researcher that could have impacted the study. The Nintendo GameCube and current Nintendo Wii were not selected, because there have been questions raised in the past concerning Nintendo’s future in the home video games market (see, for example, Brandt, 1995 and Sullivan, 2003). The release of the new Wii in December 2006 was disappointing, with only a few hundred gamers lining up at retail stores for the launch, as compared to thousands for Sony and Microsoft (Ramsay, 2006). This research sought to provide practical insights for marketing managers, so findings based on a console brand that potentially could no longer exist would have been in conflict with this aim.

Microsoft Xbox was selected as the game platform. This system was introduced in 2001, but it has less market share and brand equity in the games market than Sony. It was logical to assume that fewer experimental subjects would have been exposed to Microsoft Xbox than Sony PlayStation and would be less positively predisposed to the brand. Positive attitudes toward the console brand may have introduced a confound not being investigated as part of the study. The current generation console, the Xbox 360, was not appropriate for use, as this console was only launched in Australia in March 2006 (Microsoft, 2006), hence the availability of games was still limited at the time of the study.

**The game:** To determine which video game should be used as the stimulus for study one, many issues were considered. Creating a video game was not an option, as this would have adversely affected external validity, and would have required financial and time resources not available for this research. The novelty of the stimulus may
have also influenced the results and masked the true effects of product placement. Additionally, the study sought to test whether a player’s skill level in the game may act as a confound in any main effects of exposure to a brand or product placement. This necessitated the use of an existing video game. The selection also reflects the need to retain control over subjects and their environment.

The key criterion that had to be met in selecting a video game was the existence of product placement. It was necessary for this to appear naturally in accordance with the definition of product placement developed for the research. Unnatural brand appearances would have been likely to attract the abnormal attention of subjects, thereby confounding the results. Realism is an important condition for placements, as discussed in Chapter 2, so adventure and fantasy games were eliminated. In general, these games feature few placements because there is a poor fit for real brands. Based on a review of different games and the literature, sports games were identified as one of the most common genres used for marketing messages (Lienert, 2004). Such games are most conducive to the practice due to their ability to replicate the advertising that appears at real events. Sport and racing games are also two genres most commonly purchased (RocSearch, 2004). It was decided that a sports game would be used.

One aim of the research was to produce findings relevant to marketing practitioners. A review of product placement in sports games and of the literature was undertaken to identify the product categories commonly used for the strategy. Vehicle manufacturers were found to be heavy users of video games as a medium for marketing communications, particularly car racing games. Such games commonly feature products/brands both in the form of peripheral advertising and simulated in use. This was a requirement for study one, as the research sought to test the effects of different placements on attitudes and image. Also, it has been suggested these games might be most suited to product placement, as they represent a simulation where brands are needed to help reconstruct the reality (see, for example, Molesworth, 2006; Nelson, 2002). A car racing video game was therefore selected as the stimulus.
Issues associated with validity and realism meant the game had to be based on an existing car race (opposed to one where the brands are real, but the circuits and characters are false, as in *Gran Turismo* or *Need for Speed Underground*). It was also preferable not to select a game that could induce a negative mood amongst subjects, due to the potential adverse effect on attitudes (Axelrod, 1963; Mathur and Chattopadhyay, 1991). Although this study aimed to test whether attitudes would be ‘higher’ not necessarily more ‘positive’, controlling this was consistent with the theme of the thesis in seeking to determine the existence of any positive benefits for marketers. Use of the highly popular, violent and controversial video game *Grand Theft Auto* was therefore ruled out. Since the research was conducted in Australia, it was appropriate for the game to be based on an Australian car race with which respondents would be familiar. It should be noted that motor racing is the third highest attended sport in this country (ABS, 2007).

The video game selected was *V8 Supercars 2*, the official racing game licensed by the Australian Vee Eight Supercar Company (AVESCO, recently renamed V8 Supercars Australia). It is based on the V8 Australian Touring Car Championship, which is Australia’s largest, professional motor sport series, now telecast to 400 million homes in over 70 countries (McKay, 2004) and attended by more than 1.7 million people per annum (V8 Supercars, 2007). In the game, the motor sport teams, locations, imagery, events, circuits, drivers and sponsors appear naturally, almost as they do in the real series. Authentic sound recording has been used for all the vehicles, the car mechanics and handling are modelled on actual brands, and collisions are based on the system used by the crash test industry (Product Review, 2004). *V8 Supercars 2* also allows for customisable car set-ups to provide a true-to-life driving experience. The game has been tested by professional race drivers and labelled ‘the most immersive racing experience ever’ (Games Universe, 2004). All the key characteristics of video games as presented in section 2.6.2 are evident in this game.

The selection of *V8 Supercars 2* satisfied the requirements for this study. It is a game available in the market, based on a real sport and features existing brands. Its selection therefore counteracted any novelty effects. A potential disadvantage, however, was the risk to internal validity of unwanted ‘noise’ and effects from
respondents who had previously played the game. The issue of ‘noise’ was required to replicate the true conditions by which gamers are exposed to product placement. Also, confounds associated with prior exposure to the game were removed by assessing skill level. Finally, V8 Supercars 2 was released in late 2004, and was therefore a relatively new video game at the time of data collection.

**The brands:** To maximise data collection, brands had to be from product categories that were familiar to and likely to be purchased and used by the sample. The brands selected also had to be real, because involvement with a product category was identified as a covariate that could potentially impact consumers’ response to product placement. As discussed earlier in this chapter, processing ability can be reduced as a result of limited product knowledge or experience (Anderson and Jolson, 1980; MacKenzie, 1986). Had unfamiliar brands been selected, attitudes may not have been affected as a result of constraints on processing motivation due to a lack of ability. Selecting familiar brands, therefore, provided optimal conditions for any attitude effects to be demonstrated.

The brands selected also had to be viewed somewhat favourably in the marketplace, although they were not meant to be particularly exciting, nor was it critical that their manufacturers possessed a very strong image. This was controlled for in the study, plus a more positive image does not necessarily lead to more positive consumer evaluative and ethical reactions (d’Astous and Seguin, 1999). Ethically charged products though could not be chosen, as this would have raised a number of other issues not being considered as part of the current research, such as attitude towards the ad and irritation effects (De Pelsmacker and Geuens, 1996; De Pelsmacker and Van den Bergh, 1998). Finally, the brands chosen needed high fit with the game because the literature suggests incongruent placements can adversely affect attitudes (Russell, 2002).

Two prominent brands featured in the video game and which are simulated in use are Ford and Holden. As discussed in Chapter 1, these could be considered forms of ‘product’ placement. Ford and Holden are real products injected into the V8 Supercars game which are used by a game character, in this instance, under the direction of a player. As such, selection of one of these allowed for determination of
whether consumers’ response to product placement covaried with a player’s skill level. Further, Ford and Holden are two iconic car brands, which are commonly driven on Australian roads and are therefore well known. They also have a good fit with the game because the V8 Supercars are race-modified Ford Falcons and Holden Commodores. There is a fierce rivalry between Ford and Holden both in the market and on the racetrack, with the two vehicle manufacturers able to predict new car sales based on how their V8 Supercars perform (Centrebet, 2004). This rivalry has become a part of Australian culture and has stimulated a high level of involvement amongst fans (McKay, 2004). The two brands are quite evenly matched, so there were no criteria used to decide between them for this study. Holden was selected for investigation simply due to the personal preference of the researcher.

A second brand advertised peripherally in the game had to be selected. In other words, a ‘brand’ placement as identified in Chapter 1. There are many featured on billboards alongside the different circuits in the V8 Supercars game. It was necessary to select a brand advertised on the circuit chosen for the experiment, which reduced the number of alternatives and simplified the selection process. Since a vehicle was already chosen, it was preferable to select a brand from a different product category. Suppliers of vehicle accessories and other products such as oil, fuel and tyres were eliminated. The decision was made between the three leading brands Coca-Cola, Lexmark and the airline Qantas. All three were likely to be purchased by respondents. As another iconic Australian brand, which is also a service rather than a good, Qantas was selected. Investigating a service widened the scope of the study and the value of the results. Also, not only is the Qantas brand featured on billboards beside the racetrack, but on overhead track signage. This represented another advantage. Coca-Cola and Lexmark were not selected due to the promotional activities of these firms at the time of the study. Coca-Cola in particular was inappropriate, since it represents one of the most frequently observed brands for product placement (Galician and Bourdeau, 2004).

A third brand was chosen that was not actually featured in the stimulus. This allowed for the identification of any order and game effects, which could create a bias in responses (Malhotra et al., 2004). Selecting a third brand not placed in the game meant the responses of the groups could be compared to test for these effects.
It also meant more meaningful analysis could be performed and conclusions gained concerning product placements’ influence. It was expected that if product placement influences attitudes, then subjects in the treatment groups would demonstrate a higher attitude and image towards the Holden and Qantas brands since they were exposed to them in the game, either through play or observation. It was anticipated there would be no significant difference between the control and treatment groups in terms of attitude and image for the third brand, since it was not featured. In other words, no group was exposed to the brand therefore responses would be the same.

Compaq was selected as the brand for this exercise since it is one of the world’s largest and best known computer manufacturers (Hewlett-Packard, 2005). It was therefore likely respondents would be familiar with this brand. Compaq was merged with Hewlett-Packard in 2002, but the brand is still recognised in its own right and retains a great deal of equity.

**Presentation of the independent variables:** The final decision concerning the formulation of the independent variable was how the stimulus should be presented to the experimental groups. The stimulus, the *V8 Supercars* game featuring placements simulated in use and peripherally (with the two brands referred to in the stimulus being Holden and Qantas), was directed at two treatment groups: game players and game observers. The control group was not exposed to the stimulus, but instead completed a survey at the location where they were recruited. For the treatment groups, the process for exposure to the stimulus had to be consistently followed to ensure it was the same for each pair of respondents, as best could be achieved. There were a number of factors that had a direct impact on the independent variable.

The experiment was performed in an office at an Australian east coast university. Establishing the laboratory setting in a familiar environment made access more convenient for the researcher and more comfortable for respondents, drawn from the larger population at this university. Resource constraints prevented the creation of a simulated lounge room environment; the costs associated with having to hire a venue and purchase or hire the appropriate furnishings were beyond the budget for this study. Furthermore, such a step would have raised other issues concerning location and access to respondents.
The environment for presentation of the stimulus was designed to incorporate realistic elements. Part of the office was sectioned off for the game play area using a divider with a curtain draped over it. Natural lighting was used, posters and other pictures unrelated to the experiment were featured on the walls, and a large stand-up-billboard was situated in the corner. Two chairs were placed in front of a table, which housed a large television as well as some decorative pieces such as a basket, vase, plant, candle and cushion. This set-up helped create a more pleasant ambience in the room. The environment was designed to induce a positive mood among respondents (or at least to prevent a negative one), which was important considering that mood can affect information processing (Aylesworth and MacKenzie, 1998). The Xbox was situated on the floor under the desk, with the controller resting next to the television. This was done so as not to alert respondents to the brand of console. The provision of a steering wheel and pedals would have created a more realistic driving experience, but were not used as they could have adversely affected skill level (it was anticipated fewer respondents would be familiar with using such gadgets than a standard controller). Finally, the telephone was disconnected and a sign placed on the door to prevent interruptions. These steps were taken to control the environment for exposure to the stimulus. At the same time, however, a balance had to be found with the conditions by which natural play would occur.

The researcher remained present during game play, but out of sight, standing behind respondents two metres away. Players and observers were allowed to speak to one another, adjust their chairs and use the controller buttons as they deemed appropriate (instructions for using the controller were provided, but players were allowed to select which fingers they used for example). Few restrictions were placed on subjects concerning what they were required to do during game play. By creating the laboratory setting in this way, the maximum opportunity was afforded for brand information processing (opportunity was discussed in section 3.2). The aim of the experiment was to control other extraneous variables, but still produce an environment as realistic as possible to elicit responses to brand and product placements in a video game. There were some key factors however that were controlled concerning the stimulus itself and aspects of its use.
Under natural conditions, gamers would have more flexibility to select options in the game than was afforded in this experiment. For example, they would be able to select among the motor sport teams (such as Ford Performance Racing and the Holden Racing Team); locations (such as Surfers Paradise); championship events (such as Bathurst); and drivers (like Craig Lowndes). For this study, the vehicle (including its view on the track), driver and race circuit (a low grade, easy track) were pre-selected by the researcher. This was necessary to achieve consistency, to control other extraneous variables, and to ensure the Holden brand was actually simulated in use and the Qantas brand featured peripherally to test for the effects of different placements. Furthermore, the time allowed for exposure to the stimulus was controlled, which would not naturally occur. As documented in Chapter 2, video games are involving, with the ability to move gamers into a flow state. An individual can therefore spend large amounts of time with a game in one session. For reasons of practicality, and to work within budgetary and time constraints, this measurement was controlled, which poses limitations for the study as presented in Chapter 5.

Respondents were required to complete one lap of the racetrack in the game, as either a player or an observer. The experiment was constructed this way to test for any difference in attitude or image effects depending on the role of the subject. The experimental design provided the ability to control the role of respondents so that they were unable to switch modes. This was necessary, since the movement of a subject from being a player to an observer and vice versa could have affected their motivation to process brand information, which in turn may have had a corresponding effect on attitudes and image. It was not the intention of this study to test these differences, but rather, to determine whether being a player or an observer at a single moment in time would affect attitudes and image (in other words, after just one exposure to the stimulus or completion of one car lap). This was a cross-sectional design, so subjects were assigned to one group with one measurement taken.

It was necessary for one lap of the circuit to be completed so players and observers could then be exposed to a replay of their race. This meant that every respondent was exposed to the circuit at least twice, thereby receiving multiple brand exposures,
though the exact number depended on the skill level of the player. For example, if a subject experienced a crash so severe that it rendered them unable to continue gameplay, they were allowed to commence the game again. In some instances, a subject’s skills may have been so poor that this process had to be repeated several times. These respondents would have received a higher number of exposures to brands at the start of the race, as compared to a more competent player, who would have had greater exposure to the vehicles and signage of his/her opponents. A question was incorporated into the survey instrument to gauge skill level, which was self-reported by the player and by the observer. Skill level removed several confounds which may have existed.

In accordance with these requirements, the use of instructions had to be considered as part of the stimulus presentation. The manipulation of instructions can create variation in the independent variable (Christensen, 1997). This occurs, for example, when the interpretation of instructions varies by respondent. Instructions were therefore kept as short as possible, but detailed enough to ensure experimental control and consistency. Verbal instructions were communicated to subjects prior to stimulus exposure in order to facilitate the experiment (including details of what was required of them and how to play the game), but more detailed information was supplied in a written cover letter, distributed upon survey completion. A more comprehensive discussion concerning instructions for this research is presented at section 3.3.4.

3.3.2.2 Dependent Variables
The constructs of brand attitude and corporate image were operationalised using pre-existing scales (the original scales appear at Appendix 1). The use of existing scales and questions is advocated in the literature, particularly when measuring a variable which is central to the study, as it reduces the potential for errors associated with the survey instrument (Bryman, 2004; Fink, 2006; Fowler, 2002). The selection of scales for this study took into consideration their appropriateness, reliability and ease of use.

The scales used for this research were combined to create overall measures for the constructs of interest. When employing measures that have previously been used
and refined, it is necessary to test the reliability of the measuring instrument to
ensure it is free from random error (Hoyle, Harris and Judd, 2002). Cronbach’s
alpha is a useful measure for this task, as it can help ensure the reliability of each
scale and ascertain the extent to which the results can be repeated (Nunnally, 1978).
Burns and Bush (2000) suggest that, in such an instance, reliability levels should be
in excess of .70. Nunnally (1978) contends that .70 is sufficient, but .90 is desired if
the results will be used to make critical decisions. A summary of the reliability
levels for the scales used to measure the dependent variables in this study is shown at
Table 3.1. The reliabilities were acceptable, as all scales achieved a Cronbach’s
alpha coefficient of greater than .70, ranging between .72 and .95.

Table 3.1 Item Reliabilities for Dependent Variables

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden Brand Attitude</td>
<td>.90</td>
</tr>
<tr>
<td>Holden Corporate Image</td>
<td>.72</td>
</tr>
<tr>
<td>Qantas Brand Attitude</td>
<td>.85</td>
</tr>
<tr>
<td>Qantas Corporate Image</td>
<td>.95</td>
</tr>
<tr>
<td>Compaq Brand Attitude</td>
<td>.85</td>
</tr>
<tr>
<td>Compaq Corporate Image</td>
<td>.90</td>
</tr>
</tbody>
</table>

Source: Current study; n=60

The constructs were measured using 7-point Likert-type scales. These scales
measured level of agreement with a series of statements anchored by the descriptors
strongly disagree and strongly agree. The scales were replicated for each of the
brands under investigation, but with slight modification to the statements (these
appear at Appendix 2). Additional questions were incorporated to test the covariates,
as discussed below.

The dependent variable of brand attitude was measured using the Brand Quality
instrument reported by Keller and Aaker (1992). This is a 3-item semantic
differential scale anchored by descriptives and their negatives. The descriptives are:
high quality, very likely to try, and superior product. This was changed to a Likert-
type scale with strongly disagree and strongly agree as anchors for consistency.
Keller and Aaker (1992) reported a reliability in excess of .70, but for each brand
examined in the current study, reliability levels were at .85 or above.
The subjects’ image of the brand manufacturer was assessed using a modified version of the Corporate Image scale presented by Javalgi et al. (1994). In a previous study by Pope and Voges (1999), a 5-item version of the scale was found to possess greater reliability (Cronbach’s alpha=.76) than the original 6-item scale. The descriptives are: has good products, is well managed, is involved in the community, responds to consumer needs, and is a good company to work for. For each of the brands investigated in the current study, reliability levels were above .76, except in the case of Holden, which still achieved a reliability above the .70 requirement.

The construct of attitude toward the Holden brand was operationalised using the 3-item, 7-point Likert-type scale discussed above (Keller and Aaker, 1992). The scale uses the anchors of strongly disagree and strongly agree for response to the statements:

- the Holden car is of high quality
- I would be very likely to try a Holden car, and
- the Holden car is a superior product.

The current study achieved a Cronbach’s alpha of .90.

Holden corporate image was measured using a 5-item, 7-point Likert-type scale (Pope and Voges, 1999). Respondents were asked to indicate their level agreement with the statements that the Holden car company:

- has good products
- is well managed
- is involved in the community
- responds to consumer needs, and
- is a good company to work for.

In terms of reliability, the scale achieved a Cronbach’s alpha of .72 in the current study.

The constructs of brand attitude and corporate image for the Qantas brand were operationalised the same way as in the case for Holden. A 3-item and 5-item Likert-type scale was used for attitude and image respectively, although the statements varied slightly. To measure brand attitude, respondents were asked to indicate their level of agreement with the following:
- the Qantas service is of high quality
- I would be very likely to fly Qantas, and
- Qantas flights are a superior product.

The Cronbach’s alpha achieved was .85.

For corporate image, the anchors strongly disagree and strongly agree were used in response to the statements:
- Qantas has good products
- Qantas is well managed
- Qantas is involved in the community
- Qantas responds to consumer needs, and
- Qantas is a good company to work for.

This scale achieved a Cronbach’s alpha of .95.

For Compaq, the same scales were again employed, but with minor variations for the statements. In order to measure attitude, respondents were asked to indicate their agreement with the statements:
- the Compaq product is of high quality
- I would be very likely to try a Compaq product, and
- the Compaq machine is a superior product.

Also, to measure image:
- Compaq has good products
- Compaq is well managed
- Compaq is involved in the community
- Compaq responds to consumer needs, and
- Compaq is a good company to work for.

In this study, these scales achieved Cronbach’s alphas of .85 and .90 respectively.

Changes in brand attitude and corporate image were measured by taking the difference between the measures for each of the three groups (two treatment groups of player and observer, and the control group).
3.3.2.3 Covariates

In order to examine the relationship between video game product placement and attitudes (toward the brand and its manufacturer), it was necessary to exclude any interference in the main effects, which could potentially occur through covariates.

Shiffrin and Schneider (1977) suggest that the ability to perform two tasks simultaneously (such as playing a video game and attending to brand information contained within it) depends on the amount of prior learning of one or both tasks (in other words, the extent to which processing of the task(s) is automatic). Other researchers have also warned about the confounding potential of individual differences in experience with computerised media (Jih and Reeves, 1992), as level of experience has been shown to affect attitudes toward computer programs (Goldstein and Ford, 1978; Kieras and Polson, 1985; Rich, 1983; Vincente, Hayes and Williges, 1987). The covariates of involvement and skill level were therefore identified as potential confounds to the relationship between the independent and dependent variables. It was necessary to control these variables and remove their effects.

The construct of involvement was operationalised with regards to level of car involvement. This was measured using the Srinivasan and Ratchford (1991) Product Involvement scale. This is a 6-item Likert-type measurement asking respondents to describe themselves as having an interest in, being fascinated by, having a compulsive need to know about, or being crazy about cars. Two items ask about liking auto races and liking to engage in conversation about cars. Srinivasan and Ratchford (1991) report an alpha of .86. Using this scale, the current research study applied a 6-item, 7-point Likert-type scale anchored by the descriptors strongly disagree and strongly agree, and achieved a Cronbach’s alpha of .95.

Participants in this study (both game players and game play observers) were also asked to rate the driving ability of the game player. The response to this question indicated the player’s level of experience with the game and was used as a covariate. Players were asked to indicate their level of agreement with the statement ‘In this race I drove well’. The statement was modified slightly for game play observers to become ‘In this race the player drove well’. Skill level was measured using a single-
item, 7-point Likert-type scale, so no Cronbach’s alpha score for testing reliability was possible. The mean score achieved for players was 2.55 (n=20) and for observers 3.20 (n=20). Overall mean for skill was 2.88 (n=40). Neither statement referring to skill level was incorporated into the third version of the survey instrument for the control group (n=20), as these subjects were not exposed to the stimulus.

3.3.3 Sample
The sample for this research was drawn from the population of members of an Australian east coast university community. A general sample was selected, as it was not necessary for respondents to possess any distinguishing characteristics. The research was not seeking to include subjects that possessed particular game playing habits, a certain skill level, or a particular level of involvement with the brands selected for investigation. The research aimed to test the influence of these characteristics on responses to the stimulus, therefore a sample of respondents was sought that possessed differences on each of these dimensions. The research was also not seeking to survey respondents of a particular gender or age, because such a selection would not reflect the true, diverse demographics of gamers, as discussed in Chapter 1. Although car racing was a focus in this study, it was appropriate to select a mix of males and females of varying ages, as this is consistent with the demographic profile of motorsport enthusiasts, event attendees and other fans (ABS, 2007; GT Performance Racing, 2007; Sheldon, 2001). In 2005-2006, the majority of motorsport event attendees were aged between 18-44 years and 40% of spectators were female (ABS, 2007). Questions pertaining to the aforementioned issues were incorporated into the survey instrument.

Selecting sample elements from the university community was relevant to the research question and representative of the larger population of gamers. When the research goal is theoretical explanation, as it is in this research, a homogeneous sample is often preferred, although not imperative (Sternthal, Tybout and Calder, 1994). Heterogeneous samples, on the other hand, are useful for theory generation (Sternthal, Tybout and Calder, 1994). It was anticipated the differences between sample elements might allow for explanation of the results and therefore offer the potential for the development of new theories as part of this study. The similarities
they shared, however, would increase the likelihood the experimental treatment would affect all participants in the same way.

The majority of subjects were likely to share similarities pertaining to two key factors: educational background and intelligence. As identified at section 3.2, limited education and intelligence can adversely affect processing ability (Anderson and Jolson, 1980). Selection of a sample from the university helped control these processing moderators, as these respondents possess a higher education and were therefore more likely to be of higher intelligence. This produced the greatest potential for brand processing to occur. Furthermore, all subjects were adults. This selection fills a gap in the video games literature, which has tended to focus on video game effects (such as violence) among children (discussed in section 1.3.5).

The limitations of using a student sample have been highlighted by Wells (1993) and Schultz (1969) who contend that the use of such a sample can adversely affect research outcomes, and pose difficulty in generalising the results to a larger population. For this reason, the sample for this study was not selected from students at a university, but rather the university community as a whole. It therefore included students, academics, other staff, university guests, and any colleagues, friends or family of students and staff who happened to be on campus at the time of the research. Including other respondents helped address the limitations and criticisms of student samples. There are still limitations, however, associated with this selection pertaining to generalisability, which are discussed in further detail at section 5.6. Babbie (2004) suggests though this weakness is less significant in explanatory research, and that causal relationships are more generalisable and stable than is typical in other research types.

As previously discussed, the setting for the experiment was a central location at the university (reasons for the use of this setting were explained at section 3.3.2.1). Potential respondents were therefore intercepted on campus and asked if they would be willing to participate in the study. Every fourth person passing a given point was approached until 20 respondents per group were recruited. Upon receiving a refusal, the sampling procedure dictated acceptance and subsequent recruitment of another potential participant. There was no need to screen respondents in order to verify
their eligibility for participation, due to the reasons discussed above. To prevent bias in sample element selection, however, respondents were recruited from different locations across the university campus, and the experiment was conducted at different times of the day and on different days of the week, including the week-end. A simple random sampling technique was therefore employed.

Simple random sampling is a probability sampling technique where each element in the population is given a known and equal chance of selection for participation in a study (Malhotra et al., 2004). It offers the advantage of being able to project the sample results to the target population, although caution must be exercised since simple random sampling may or may not result in a representative sample (Malhotra et al., 2004). This type of sampling is also relatively cheap compared to other techniques. It therefore satisfied the budgetary considerations for the current study, but its selection meant a trade-off in terms of precision. Other sampling techniques are available which produce a higher certainty for the characteristics being measured, thereby reducing sampling errors. The sampling efficiency associated with simple random sampling however was adequate for the study at hand.

Upon selection, respondents were randomly assigned to one of three groups: control or one of two treatments. This reduced the risk of selection bias. In the case of the treatment groups, respondents were recruited two at a time. As such, a random split-pair technique was used to allocate subjects to the treatment of player or observer. These respondents were exposed to the stimulus only once, and remained within their treatment group during the course of the experiment (in other words, respondents were not allowed to switch from being a player to an observer and vice versa). Data were collected from the control and treatment groups via a self-administered survey.

The sample size was determined based on the guidelines offered by Roscoe (1975) and Sekaran (2003). These authors indicate carefully selecting a small sample is preferable to poorly selecting a large one. They advocate that sample sizes of 10 to 20 are appropriate for tightly controlled experimental research, and that when employing multivariate analysis, the sample size should be 10 times larger than the number of variables. Hair et al. (2006) support this contention, suggesting sample
sizes for this type of analysis should be larger than the number of dependent variables, with a preferred minimum of 20 observations per group. When using an analysis of variance technique however, as was used in this study, sample sizes can be even smaller than those required for multivariate analysis (Hair et al., 2006). Resource constraints are also commonly recognised as a consideration in sample size determination (see, for example, Bryman, 2004; Malhotra et al., 2004).

Considering the limited budget for this research and guidelines offered in the literature, a sample size of 20 respondents per group was deemed appropriate for the current study. Twenty respondents were randomly allocated to each of the three groups, for a total sample size of 60. The number of usable questionnaires was 60, with all three groups being equal in size. This was adequate for the purpose of the research and the data analysis methods selected: analysis of variance and analysis of covariance. Further details of the data analysis methods are presented at section 3.3.8.1. Additional information about the sample is presented in section 3.4.1.1.

3.3.4 Survey Instrument

The survey instrument for this research (available at Appendix 2) was designed using the guidelines offered by Bradburn, Sudman and Wansink (2004); Hair, Bush and Ortinau (2000); Malhotra et al. (2004), and discussed in Chapter 1. This helped to maximise the reliability and validity of the instrument, and thereby increase the quantity and quality of responses. A number of factors were taken into consideration.

The survey consisted of two parts with the questions following a logical flow, starting with the simplest questions and increasing in difficulty. Respondents possessed the necessary knowledge to answer them. Simple wording was also used and the format was designed to move respondents easily through the survey, negating the need for lengthy transitional or question-answering instructions. The number of survey questions was kept to a minimum, and only those directly relevant for the research were incorporated to reduce the potential for fatigue. This was important because, in the case of the experimental groups, respondents had already committed time to playing a game prior to survey administration. The survey therefore was kept to only three pages in length.
Respondents were asked to complete the questions in order so as to avoid contamination of the results, and the researcher remained present during survey completion to ensure compliance. This was critical considering that one of the later questions asked about brands in the game. The researcher’s presence also prevented discussion between players and observers concerning the nature of the research. Questions seeking demographic information were placed at the end of the survey, as it was thought the question pertaining to age may be perceived as personal and could negatively affect the likelihood of completion.

Other steps were taken to make the survey simple and thereby reduce the potential for errors. Since a self-administered questionnaire was used, it was particularly important to minimise the potential for response error. The advantage of the study was that this was reduced because the researcher was present, therefore respondents had the opportunity to seek clarification if necessary (although this did not occur).

The survey used a series of closed questions all formatted the same for ease of completion. The reliability of the instrument was enhanced through the use of pre-existing scales. Respondents were asked to indicate their opinion on a number of statements relating to each of the brands, in order from Holden to Qantas and then Compaq. The same groups of attitudinal questions were repeated for each of the brands. Scales were 7-point and therefore included a middle alternative, or point of indifference. It was anticipated that an attitude of indifference may be valid. Only two open-ended questions were employed, one pertaining to brand recall (discussed at section 3.4.1.2) and the other to age. Response categories were not used to extract age information, but instead a specific figure was requested. Since a numerical response was obtained, this question posed no challenge for data analysis. The heavy reliance on closed, structured questions for the questionnaire is justified, since these are most appropriate for self-administered surveys (de Vaus, 2002; Fowler, 2002). The use of structured questions also provides an opportunity for more advanced and less time consuming data analysis (Malhotra et al., 2004).

A total of three surveys were developed for this research, one for each of the experimental groups and one for the control group. These surveys were near identical. The questions pertaining to each of the brands were the same for all
groups, and all respondents were asked to indicate their age and gender. Additional questions were incorporated into the instrument for the experimental groups, asking about the skill level of the player and brands that could be recalled from the game. The survey instruments can be viewed at Appendix 2.

Instructions presented a challenge for this research. A balance had to be found between providing sufficient instructions to facilitate the provision of accurate responses, and hiding the true purpose of the research to prevent response bias. Respondents were therefore recruited by being informed that the researcher was conducting a study about video games, and that their participation would involve playing or observing a game and/ or answering a questionnaire. They were not told which game, nor that the true purpose of the study was to assess responses to brand and product placements. Treatment group subjects were recruited (and participated in the experiment) in pairs. In some instances individuals knew each other, in others they did not. Those who agreed to take part were escorted to the location of video game play where they were asked to take a seat in front of the television, which was switched off. More detailed instructions were communicated verbally, in accordance with ethics protocol (discussed in section 3.3.6).

Subjects were supplied details of the program of study for which the research was a part, the names of the researcher and primary supervisor, details of the expected time required for their participation and the activities involved. Subjects were told they had to either play or observe a video game, following which time they would be required to complete and submit a questionnaire administered by the researcher. This questionnaire had to be completed immediately and submitted in person. Issues pertaining to confidentiality, data use and storage, voluntary participation, ethics clearance and the provision of research findings were also addressed with respondents, prior to them giving their consent to participate. Subjects were also advised they would be entered into a draw to win a movie voucher, as an expression of gratitude for their participation. Once all this information was supplied, subjects were given the option to withdraw from the study if they wished.

Upon gaining consent, the television was switched on and respondents were advised they would be playing or observing the V8 Supercars game. Specifically, they were
informed it was necessary to complete one lap of the circuit, and that the game would be re-started by the researcher each time a serious crash prevented continuation. Respondents were advised that following this, they would be required to watch a replay of their race. Subjects were randomly assigned to the treatment groups, with instructions then given to players as to how to use the controller.

This process was consistently followed, with all the aforementioned information communicated verbally to subjects prior to the commencement of the experiment. It was necessary to supply general instructions this way to disguise the true purpose of the study. Upon completion and submission of the questionnaire to the researcher, respondents were supplied a letter to retain confirming all the details of the research. This questionnaire cover letter is presented at Appendix 2d.

Although pre-testing survey instruments is recommended in the literature (see, for example, Bradburn, Sudman and Wansink, 2004; Fink, 2006; Fowler, 2002), in this study it was unnecessary since pre-existing scales were employed. A pre-test was performed, but with only a small group of respondents whose results were later excluded as part of the analysis. The primary purpose of this pre-test was to identify any potential problems with the methodological procedure. The respondents engaged in game play and completed the questionnaire following the same process as that used in the true experiment. No issues were uncovered.

3.3.5 Survey Administration
The survey instrument was administered to respondents in the experimental groups following exposure to the independent variable. The television was switched off before this occurred, and respondents were informed they were not allowed to communicate with one another once the survey was distributed. Game players and observers were separated to ensure no copying of responses. The survey was completed upon receipt, and collected at the central location where the experiment took place. In the case of the control group, the instrument was completed at the location where the respondent was recruited, and was submitted immediately to the researcher. Distribution and completion of the survey instrument in this way overcame the risk they would not be returned, which represents one of the key disadvantages of self-administered surveys (de Vaus, 2002). Furthermore, since the
researcher remained present during this process, respondents had the opportunity to seek clarification, thereby reducing the possibility of incorrect and incomplete responses.

As previously highlighted, three variations of the survey were produced, one for each group of respondents. Each version was distributed to 20 subjects, for a total distribution of 60 surveys. No respondent was approached more than once. Time for completion lasted between 4 and 7 minutes. The control group merely received and completed the survey instrument, but the experimental groups received a treatment (in other words exposure to the video game) prior to administration of the questionnaire. Time for video game exposure ranged from 4 to 18 minutes and was dependent on the skill level of the player (recall that one lap of the circuit had to be driven). The average time for exposure to the stimulus was 9.5 minutes. Actual game play lasted between 2 and 14 minutes, with an average of 6 minutes. Time spent viewing the game replay ranged from 2 to 8.5 minutes, with the average time being 3.5 minutes.

Following completion of the experiment and/or the survey instrument, respondents were debriefed concerning the true purpose of the research.

3.3.6 Ethical Considerations
The proposal for study one was reviewed and approved by the Secretary of the Griffith University Human Research Ethics Committee. The guidelines of the Ethics Committee were obeyed in accordance with the ethical clearance granted. A copy of the permission is provided at Appendix 3.

Respondents were not exposed to any harmful procedures as part of this research, participation was voluntary, the anonymity of respondents was protected, and respondents were debriefed following survey completion. As highlighted above, detailed information was also supplied prior to the participation of respondents in the experiment.
3.3.7 Validity of the Experiment

When conducting an experiment a researcher has two goals. The first is to draw valid conclusions about the effects of the independent variables on the study groups, or in other words, to ensure the experiment is internally valid (Malhotra et al., 2004). The second goal is to make valid generalisations to a larger population of interest, referred to as external validity (Malhotra et al., 2004).

If the results of an experiment are to be of any value, internal validity is a minimum requirement (Malhotra et al., 2004). It refers to whether changes in the dependent variable are caused by the independent, as opposed to other extraneous factors (Hair, Bush and Ortinau, 2000; Zikmund and Babin, 2007). If the observed effects on the test units are caused by variables other than the treatment and its manipulation, it is difficult to draw valid inferences about the causal relationship between the variables. The research literature identifies a number of threats to internal validity, including history effects, subject maturation, the testing process, instrumentation inconsistency, selection bias, statistical issues and experimental mortality (Bryman, 2004; Carmines and Zeller, 1979; Malhotra et al., 2004).

In general, a classical experimental design, as was adopted in this study, is capable of effectively addressing most of the aforementioned threats (Bryman, 2004). Many of the threats therefore were absent (or at least minimised) in the research at hand by nature of the research design. Since subjects were exposed to one treatment followed immediately by administration of the survey, history effects posed no risk to internal validity, nor did the maturation of subjects. The experiment occurred at a single moment over a very short period, with the maximum time spent being 23 minutes. Mortality was also not an issue as no subjects withdrew from the experiment. Finally, the process of testing and retesting can negatively impact internal validity, but a post-test only design was used for this research. A control group was also included. The main threats to validity were therefore related to instrumentation, selection bias and statistical issues. Steps were taken to proactively manage and reduce these specific threats.

In an attempt to control for demand artifacts, the true purpose of the research and the constructs of interest were hidden from respondents, as were the brands under
investigation. This was done so as not to sensitise respondents to the product/brand placements. The survey instrument used for all groups was almost identical and respondents in both treatment groups were exposed to the same manipulations. During the course of the experiment, no changes were made to the measuring instrument or in the researcher, thereby removing the occurrence of instrumentation effects. Selection bias was addressed by randomly assigning respondents to each of the groups, as described in section 3.3.3. Respondents were tested only once. The use of a post-test-only design which employed randomisation, also reduced the potential for regression to the mean and test subjects with extreme scores from moving closer to the average during the course of the experiment (Graziano and Raulin, 1997). Finally, the threat of statistical issues was minimised through careful selection of the products that were a focus in the study (discussed in section 3.3.2.1) and due to the homogeneity of the sample.

A range of extraneous variables were controlled in the experiment to establish internal validity, thereby allowing for valid conclusions about treatment effects to be drawn for study one. In the absence of this, the results would have been confounded, but as is often the case in applied marketing research, an increase in internal validity meant a trade off in external validity.

External validity refers to whether experimental findings can be generalised beyond the specific research context to the real world (Bryman, 2004). The greatest threat to this occurs when experiments are conducted in artificial environments, such as a laboratory, as opposed to in the field under true market conditions. The corresponding result is that internal validity is enhanced, but external validity is reduced, because the researcher may be unable to realistically take into account the interactions of other variables that occur in the real world, as part of the experimental conditions (Malhotra et al., 2004). Respondents may also be subject to reactivity, whereby they behave differently because they know they are involved in a research experiment, or because they possess a desire to please the researcher (Hair, Bush and Ortinau, 2000).

Since the experiment for this study was performed in a contrived setting, it is prone to being externally invalid. The ability to generalise findings from study one to the
general population will therefore be subject to limitations (discussed in Chapter 4). Within the constraints of the research design, however, steps were taken to maximise external validity. It was necessary to increase experimental control, but to also provide an environment similar to existing video game play, so as to alleviate the problems associated with forced exposure design. This tends to encourage subjects to attend to stimuli more than they otherwise would. The experimental conditions therefore aimed to reproduce the characteristics of ‘natural’ video game play, as discussed in section 3.3.2.1. As part of this, extraneous variables were controlled and their impact reduced to prevent interference with responses to the stimulus. The design of the research study also sought to compare the dependent variable between groups, rather than focusing on the results of any one group.

3.3.8 Data Analysis
This section will provide information concerning the selection of data analysis techniques, including justification for this selection. The procedures adopted with regards to data verification are also outlined, with information presented concerning data screening, missing data and outliers.

3.3.8.1 Justification of Analysis Techniques
A number of issues were considered in determining the most appropriate statistical techniques for analysing the data collected in study one. These included the research question, number of dependent and independent variables, and the existence of covariates.

Study one sought to understand the effects on consumers of brand and product placements in video games. Specifically, it sought to identify the relationship between video game product placement (including use simulated and peripheral placements) and brand attitude and corporate image. The objective was to identify the differences between respondents who played the video game, those who observed the game play, and those not exposed to the game, with regards to these two dependent variables. Two additional elements needed to be allowed for in the relationship, product involvement and skill level. To examine these relationships, analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were identified as the most appropriate statistical techniques.
ANOVA is a statistical technique, which is particularly suited to experimental designs (Hair et al., 2006) and is used for examining the differences in means for two or more groups (Hair, Bush and Ortinau, 2000). In this study, its use was appropriate since the emphasis was on the existence of any difference in brand attitude and corporate image between the groups examined: those exposed to the game and those not exposed, and those who played the game versus those who observed. The use of multiple regression was therefore rejected, as was the use of multiple discriminant analysis since the dimensions of any differences were not a focus, only the existence of a difference. Multivariate analysis of variance (MANOVA) was an alternative technique which could have been used, but was discarded for a number of reasons. Firstly, with MANOVA it can be difficult to achieve a clear interpretation of the effect of the independent variables on a single dependent variable (Hair et al., 2006). In this study, brand attitude and corporate image were examined as separate dependent variables. Furthermore, each brand investigated as part of the study was different, as each represented a distinct type of placement and/or product. This necessitated independent analysis for each brand. Finally, MANOVA is more complex than ANOVA, making it sometimes difficult to interpret its results and the relationships between the variables (Malhotra et al., 2004).

The number of variables, the non-metric nature of the independent variables, and the metric nature of the dependent variables suggested the use of ANCOVA in conjunction with ANOVA (Hair et al., 2006). Like ANOVA, this is a technique which identifies differences between groups, but it allows for the removal of extraneous variables from the dependent (Hair et al., 2006). It therefore offered the advantage of allowing for the control of involvement and skill level on the dependent variables in this study. Also, the use of both ANOVA and ANCOVA was justified, as these statistics for data analysis assume randomisation, and were particularly appropriate considering the group sizes in the current study (Hair et al., 2006).

### 3.3.8.2 Data Verification

Once data were collected for this research, responses from all 60 participants were summarised in a quantifiable form. Data were entered into the statistical package Statistica for Windows, version 6.
Prior to performing the analysis techniques described previously, the data were screened and their basic characteristics examined. They were checked for inconsistencies, errors, out-of-range values and sabotage, but no problems were detected. Furthermore, they were tested to identify the existence of any stimulus or order effects, but none were evident. The data were also examined for missing values.

Missing values were identified in 12 cases relating to 6 of the 33 variables. There was not a high level of missing data for any one case or overall, plus there was no pattern in the data. Rather than substituting missing values with a mean response, which can introduce bias into the data (Malhotra et al., 2004), an alternative procedure for the treatment of missing responses was employed. If in a particular analysis there was a missing value, that particular case was excluded from that analysis. No case was eliminated for all analyses. Given the small number of cases with missing values, this procedure was acceptable. Furthermore, although this meant a reduction in sample size for some statistical tests, the sample sizes still exceeded the recommended minimum, and the data analysis techniques allowed for size differences.

Next, the data were screened to identify outliers. This was important since outliers could have had a disproportionate influence over the results and since ANOVA is particularly sensitive to them (Hair et al., 2006). No outliers were identified. Finally, descriptive statistics were performed on the data. Further discussion of this basic data analysis is presented at section 3.4.1.

Upon completion of the data verification, the relationships between the variables identified in section 3.2 were tested using the ANOVA and ANCOVA techniques. The results of these tests are presented next.

3.4 Findings

Section 3.3 outlined the method used for collecting data for study one. This section presents details of the data analysis. It begins with a discussion of the sample demographics, followed by further information pertaining to the ANOVA and
ANCOVA techniques used for testing the variables of interest. The results are also presented. Discussion and explanation of the findings in the context of the literature is presented at section 3.5.

3.4.1 Basic Data Analysis
Basic data analysis was performed initially to determine the sample characteristics and to ensure the data complied with the assumptions of the ANOVA and ANCOVA techniques.

3.4.1.1 Sample Description
As discussed in section 3.3.3, the sample size for this research was 60, with 20 respondents in each of the three groups, including two treatment (player, observer) and a control group. No cases were deleted as a result of missing values or outliers. Where a missing value existed, the case was excluded from the particular analysis being performed (in other words, the case relating to the particular variable under investigation was eliminated).

The demographic characteristics of the sample are presented at Table 3.2. A total of 32 males and 28 females participated in the study. The mean age for the entire sample is 25.03 years with a standard deviation of 9.70. The standard deviation and the range in age from 18 to 60 years can be explained by the fact that, respondents were intercepted on university campus, whereby every fourth person passing a given point was approached. The sampling procedure was also carried out at different times and on different days of the week. Given the range in age, no further testing was performed in relation to this variable. Further, the effects of gender on the dependent variables were not explored, as there is consistent evidence that tests of gender effect can be unreliable (Burnett and Wood, 1988; Eagly and Crowley, 1986). Particularly with regard to consumer promotions, they have proved to be either inconclusive or contradictory (Berger, Cunningham and Kozinets, 1999; Chaney and Dolli, 2001).
Table 3.2 Sample Demographics

<table>
<thead>
<tr>
<th></th>
<th>Group 1 Player</th>
<th>Group 2 Observer</th>
<th>Group 3 Control</th>
<th>Total (All Groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>20</td>
<td>20</td>
<td>19</td>
<td>59</td>
</tr>
<tr>
<td>Mean</td>
<td>24.90</td>
<td>25.55</td>
<td>24.63</td>
<td>25.03</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>9.32</td>
<td>10.26</td>
<td>9.98</td>
<td>9.70</td>
</tr>
<tr>
<td>Min/ Max</td>
<td>18/ 60</td>
<td>17/ 55</td>
<td>19/ 55</td>
<td>17/ 60</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Male</td>
<td>75%</td>
<td>55%</td>
<td>30%</td>
<td>53.3%</td>
</tr>
<tr>
<td>Female</td>
<td>25%</td>
<td>45%</td>
<td>70%</td>
<td>46.7%</td>
</tr>
</tbody>
</table>

3.4.1.2 Confirmation Check

A question was included in the survey instrument, which asked players and observers to list the brands they could remember from the game (similar to that used by Nelson, 2002). The purpose of this question was to confirm earlier studies that players can recall placed brands (see, for example, Chaney, Lin and Chaney, 2004; Grigorovici and Constantin, 2004; Hernandez, Suh and Minor, 2005; Kuhn, Pope and Voges, 2007; Molesworth, 2006; Nelson, 2002; Nelson, Yaros and Keum, 2006; Schneider and Cornwell, 2005; Winkler and Buckner, 2006). This was confirmed.

Consistent with former investigations, it was found that gamers can recall placements, with all but seven players (n=20) and five observers (n=20) remembering at least one brand. Players recalled between zero and six brands, while observers recalled between zero and nine. Similar to Nelson, Yaros and Keum (2006), players in this study recalled fewer brands, achieving a mean score of 1.9, as compared to 3.0 for the observer group. Given these results, brand recall was excluded from further analysis.

3.4.1.3 Operationalisation of ANOVA and ANCOVA

Prior to testing using the ANOVA and ANCOVA techniques, the data were examined to ensure they conformed to the assumptions of these test procedures. Modest departures from the assumptions do not seriously affect the validity of the analysis (Malhotra et al., 2004). In the current study, the assumptions were reasonably met.
The data conformed to the assumption of normality, as the dependent variables were normally distributed. There were no outliers, skewness and kurtosis were within acceptable parameters, and the means and standard deviations were credible. Furthermore, a sample size of around 20 ensures robustness, therefore adherence to the normality assumption was not critical for the current study (Hair et al., 2006).

Adherence to the second assumption pertaining to equality of variance also was not critical. This assumption of ANOVA and ANCOVA refers to the equivalence of variance matrices for the dependent variables across the groups. Violation of this assumption has minimal impact when the sample sizes are equal (Hair et al., 2006), as they are in this research.

Finally, ANOVA also assumes there is independence in the data from each respondent, but there are no techniques to test for this (Hair et al., 2006). In an experiment the assumption can be violated by noise, confusing instructions and other extraneous effects (Hair et al., 2006). The potential for non-compliance in the current study was minimal due to the experimental design. Furthermore, the categories of the independent variables were fixed.

Apart from satisfying the assumptions of the data analysis techniques, further decisions were required with regards to their use. A related issue is that of significance levels. Significance levels were established at the .05 level, as is the norm in business research (Emory and Cooper, 1991). This level is recommended to reduce the risk of Type I and Type II errors, particularly when the sample sizes are smaller, as they are in this research (Malhotra et al., 2004).

### 3.4.2 Results of Testing

This section will present the results of the tests performed to examine the variables and relationships of interest, as discussed in section 3.2.

#### 3.4.2.1 Test 1: Effect of Brand and Product Placements on Brand Attitude

The first test examined whether an individual exposed to a brand or product placement in a video game would have a higher attitude to the brand than would an individual not exposed to the placement. There were three brands investigated as
part of study one: Holden which was used in the game, Qantas which was featured in the background as a peripheral placement, and Compaq which was not featured. These differences between each of the product/placement types necessitated testing in relation to each of the brands separately. To maintain sample size and therefore power, all three groups were included as part of this analysis, but were collapsed into two groups: those exposed to the video game including players and observers (n=40) and those not exposed, or in other words, the control group (n=20).

The scale for measuring attitude to the brand consisted of 3 items measured on 7-point Likert-type scales, with 1 representing a lower or less favourable attitude and 7 representing a higher or more favourable attitude. The summated scale was the same for all three brands. The results of the analysis for each brand are discussed systematically next and presented in Tables 3.3 and 3.4.

In relation to the Holden brand which was simulated in use in the video game, comparison of the two groups showed the means for those exposed to the game versus those not exposed were different. The exposed group achieved a mean score of 4.40 while the group not exposed achieved a score of 4.71. This indicates that those respondents who were exposed to the Holden product placement in the video game had a lower attitude to the brand than those who were not exposed to the Holden brand in the game. This result indicates the possibility of an inverse relationship which was not anticipated.

In order to test whether the means were significant, a one-way analysis of variance was conducted. The results indicate that there is not a significant difference in attitude to the Holden brand between individuals exposed to the Holden video game product placement and individuals not exposed, at a 95% confidence level ($df=1.58; F=0.55; p>.05$).

The Qantas brand, which was featured in the video game in the form of a peripheral brand placement, was also tested. The mean for individuals exposed to the video game was different to that for individuals not exposed. A mean score of 4.64 was recorded for the exposed group, while a mean of 4.60 was recorded for the group not exposed. This indicates that those respondents who were exposed to the Qantas
brand placement in the game had a slightly higher attitude to the brand than those who were not exposed to the Qantas brand in the game.

A one-way analysis of variance was conducted for the Qantas brand to test whether these means were significant. As in the case of Holden, the results indicate that there is no significant difference in attitude to the Qantas brand between individuals exposed to its video game product placement and individuals not exposed, at a 95% confidence level ($df=1.58; F=0.01; p>.05$).

Finally, the same test procedures followed for Holden and Qantas were conducted for the third brand, Compaq. Compaq was not featured in the video game. Comparison of the exposed and not exposed groups showed a difference in means between the two groups, but this difference was minimal. For the exposed group the mean was 4.40 and for the group not exposed to the game, 4.41. A one-way analysis of variance indicates this difference is not significant ($df=1.58; F=0.00; p>.05$). It was anticipated that no difference would be evident between the groups since neither was exposed to Compaq.

### Table 3.3 Means of the Attitude to the Brand for the Exposed and Not Exposed Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.40</td>
<td>1.50</td>
<td>40</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.71</td>
<td>1.65</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.50</td>
<td>1.55</td>
<td>60</td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.64</td>
<td>1.60</td>
<td>40</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.60</td>
<td>1.26</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.63</td>
<td>1.49</td>
<td>60</td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.40</td>
<td>1.41</td>
<td>39</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.41</td>
<td>0.88</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.40</td>
<td>1.25</td>
<td>59</td>
</tr>
</tbody>
</table>

n=60
In summary, the difference in means indicates the possibility of a relationship between video game product placement and attitude to the brand, but the difference is so small as to lack practical significance. Certainly, the results indicate that there is not a significant difference in brand attitude between individuals exposed to a brand or product placement in a video game and those not exposed to the placement.

### 3.4.2.2 Test 2: Effect of Brand and Product Placements on Corporate Image

Test two investigated whether an individual exposed to a brand or product placement in a video game would have a higher corporate image of that brand’s manufacturer than would an individual not exposed to the placement. To test this, the same procedures were followed as those for test one, but the summated scale for corporate image was used in the analysis.

The scale for measuring corporate image consisted of 5 items measured on 7-point Likert-type scales, with 1 representing a lower or less favourable corporate image and 7 representing a higher or more favourable corporate image. The scale was summated for each of the three brands: Holden, Qantas and Compaq. Each of the brands was tested independently, for reasons discussed previously. Change in corporate image was measured by comparison of the results for two groups: those exposed to the video game including players and observers (n=40) and those not exposed (n=20). The results of the analysis for each brand are discussed next, but are also provided in Tables 3.5 and 3.6.
For the Holden brand, which was simulated in use in the video game, comparison of the two groups showed the means for those exposed to the game versus those not exposed were different. A mean score of 4.33 was recorded for the exposed group, while a mean of 4.54 was recorded for the group not exposed. This indicates that those respondents who were exposed to the Holden product placement in the video game had a lower corporate image of the Holden brand manufacturer than those who were not exposed to the brand in the game. This result indicates an inverse relationship.

A one-way analysis of variance was conducted in order to test whether the means were significant. The results indicate that there is not a significant difference in the corporate image of the Holden brand manufacturer between individuals exposed to Holden video game product placement and individuals not exposed, at a 95% confidence level ($df=1,58; F=0.60; p>.05$).

In relation to Qantas, which was featured in the video game as a peripheral brand placement, the mean for individuals exposed to the video game was different to that for individuals not exposed. The exposed group achieved a mean score of 4.43 while the group not exposed achieved a score of 4.72. This indicates that those respondents who were exposed to the Qantas brand placement in the game had a lower corporate image of the Qantas brand manufacturer than those who were not exposed to the Qantas brand in the game.

To test whether the difference in means was significant, a one-way analysis of variance was conducted for the Qantas brand. The results reveal that there is no significant difference in the corporate image of the Qantas brand manufacturer between individuals exposed to its video game placement and individuals not exposed, at a 95% confidence level ($df=1,56; F=0.85; p>.05$).

Finally Compaq, which was not featured in the video game, was tested. Comparison of the exposed and not exposed groups showed a difference in means between the two, with a mean of 4.19 for those exposed and 4.15 for those not exposed. This indicates that those respondents who were exposed to the video game had a slightly
higher corporate image of the Compaq brand manufacturer than those who were not exposed to the game.

The means were tested to determine if the difference between them was significant, by performing a one-way analysis of variance. Based on this, there is no significant difference in the corporate image of the Compaq brand manufacturer between individuals exposed to the video game and individuals not exposed ($df=1.58; F=0.02; p>.05$).

Table 3.5 Means of the Corporate Image of the Brand for the Exposed and Not Exposed Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.33</td>
<td>0.94</td>
<td>38</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.54</td>
<td>0.58</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>4.43</td>
<td>0.84</td>
<td>56</td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.43</td>
<td>1.18</td>
<td>39</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.72</td>
<td>1.02</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>4.57</td>
<td>1.13</td>
<td>57</td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>4.19</td>
<td>1.16</td>
<td>39</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>4.15</td>
<td>0.75</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>4.17</td>
<td>1.04</td>
<td>57</td>
</tr>
</tbody>
</table>

$n=60$

Table 3.6 Results of One-Way Analysis of Variance: Corporate Image of the Brand Manufacturer by Video Game Exposure (Exposed Versus Not Exposed)

<table>
<thead>
<tr>
<th>Brand/ Group</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>0.55</td>
<td>0.60</td>
<td>0.44</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>53.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>1.10</td>
<td>0.85</td>
<td>0.36</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>72.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed</td>
<td>0.02</td>
<td>0.02</td>
<td>0.90</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>60.82</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$n=60$

Overall, the results point to a possible relationship between video game product placement and corporate image, but the difference is so small as to lack practical
significance. The results also indicate that there is not a significant difference in corporate image of a brand manufacturer between individuals exposed to a brand or product placement in a video game and those not exposed to the placement.

3.4.2.3 Test 3: Effect on Brand Attitude - Players Versus Observers

It was anticipated that an individual exposed to a brand or product placement in a video game while playing the game may have a higher attitude to the brand than would an individual exposed to the placement while observing the game. As in the case of tests one and two, this was examined in relation to Holden, Qantas and Compaq. The scale for attitude to the brand was summated and used consistently for all three brands. Two experimental groups were included in the analysis: those who played the video game (n=20) and those who observed the game (n=20). The control group was not included as it was not subjected to a treatment, that is, neither video game play nor observation. The mean scores of the attitude to the brand for the player and observer groups are shown in Table 3.7, with the results of the analysis presented in Table 3.8.

To measure the difference in attitude to the Holden brand, the means of the two experimental groups were compared. This comparison revealed the means were different, with a mean of 4.37 for those who played the video game and 4.43 for those who observed the game. This indicates that those respondents who were exposed to the Holden product placement while playing the video game had a slightly lower attitude to the brand than those who were exposed to Holden while observing the game.

To test whether the means were significant, a one-way analysis of variance was conducted. The results indicate that there is not a significant difference in attitude to the Holden brand between individuals exposed to Holden video game product placement while playing the game and individuals exposed while observing the game, at a 95% confidence level (df=1,38; F=0.02; p>.05).

Attitude to the Qantas brand was also tested. The mean for individuals who played the video game was different to that for individuals who observed the game. A mean score of 4.78 was recorded for the player group, while a mean of 4.50 was recorded
for the observer group. This indicates that those respondents who were exposed to the Qantas brand placement while playing the game had a higher attitude to the brand than those who were exposed to the Qantas brand while observing the game.

A one-way analysis of variance was conducted for the Qantas brand to test whether these means were significant. There is no significant difference in attitude to the Qantas brand between individuals exposed to its video game product placement while playing the game and individuals exposed while observing the game, at a 95% confidence level ($df=1,38; F=0.31; p>.05$).

Comparison of the two treatment groups in relation to Compaq revealed yet another difference in means. The mean scores of attitude to the Compaq brand for those who played the video game and those who observed were 4.30 and 4.52 respectively. Those respondents who played the video game had a lower attitude to the Compaq brand than those who observed.

With a one-way analysis of variance, the difference in means was tested for significance. As in the case of Holden and Qantas, the results indicate that there is no significant difference in attitude to the Compaq brand between individuals who played the game and individuals who observed the game ($df=1,38; F=0.23; p>.05$). The results of the one-way analysis of variance for each brand are presented below.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.37</td>
<td>1.73</td>
<td>20</td>
</tr>
<tr>
<td>Observer</td>
<td>4.43</td>
<td>1.28</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.40</td>
<td>1.50</td>
<td>40</td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.78</td>
<td>1.77</td>
<td>20</td>
</tr>
<tr>
<td>Observer</td>
<td>4.50</td>
<td>1.44</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.64</td>
<td>1.60</td>
<td>40</td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.30</td>
<td>1.56</td>
<td>20</td>
</tr>
<tr>
<td>Observer</td>
<td>4.52</td>
<td>1.26</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>4.41</td>
<td>1.41</td>
<td>39</td>
</tr>
</tbody>
</table>

n=40
Table 3.8 Results of One-Way Analysis of Variance: Attitude to the Brand by Treatment Group (Video Game Play Versus Video Game Observation)

<table>
<thead>
<tr>
<th>Brand/ Group</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>0.04</td>
<td>0.02</td>
<td>0.89</td>
</tr>
<tr>
<td>Observer</td>
<td>88.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>0.80</td>
<td>0.31</td>
<td>0.58</td>
</tr>
<tr>
<td>Observer</td>
<td>99.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>0.47</td>
<td>0.23</td>
<td>0.63</td>
</tr>
<tr>
<td>Observer</td>
<td>77.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=40

In summary, the results indicate that there is not a significant difference in brand attitude between individuals exposed to a brand or product placement while playing a video game and those exposed to a placement while observing a game. The results would seem to suggest a possible relationship, but the difference is so small as to also lack practical significance.

3.4.2.4 Test 4: Effect on Corporate Image - Players Versus Observers

To test whether an individual exposed to a brand or product placement in a video game while playing the game would have a higher corporate image of that brand’s manufacturer than would an individual exposed to the placement while observing the game, the same procedures were followed as those for test three. The two experimental groups and three brands were included in the analysis, but the summated scale for corporate image was used, as it was for test two. The means discussed below and reported in Table 3.9 are the results of the summated scale for Holden, Qantas and Compaq. The one-way analysis of variance results for each brand are presented in Table 3.10.

First, the corporate image of the Holden brand manufacturer was measured for each of the experimental groups. A comparison of the results showed a difference in means for video game players (n=20) and observers (n=20). A mean score of 4.37 was recorded for those who played the video game, while a mean of 4.30 was recorded for those who observed. Those respondents who were exposed to the Holden product placement while playing the video game therefore had a slightly
higher corporate image of the Holden brand manufacturer than those who were exposed to the brand while observing the game.

Using a one-way analysis of variance, the means were tested to determine whether they were significant. The results indicate that there is not a significant difference in the corporate image of the Holden brand manufacturer between individuals exposed to the Holden product placement while playing the video game and individuals exposed while observing the game, at a 95% confidence level ($df=1,38; F=0.04; p>.05$).

In relation to Qantas, the mean for individuals who played the video game was again different to that for individuals who observed the game. The group which played achieved a mean score of 4.57, while the group which observed achieved a score of 4.28. This indicates that those respondents who were exposed to the Qantas brand placement while playing the game had a higher corporate image of this brand’s manufacturer than those who were exposed to Qantas while observing the game.

The difference in means for the Qantas brand was tested for statistical significance with a one-way analysis of variance. The results show that there is no significant difference in the corporate image of the Qantas brand manufacturer between individuals exposed to its video game placement while playing the game and individuals exposed while observing the game ($df=1,38; F=0.59; p>.05$).

Finally for Compaq, which was not featured in the video game, comparison of the player and observer groups showed a difference in means. The mean for individuals who played the video game was 4.10, and 4.27 for individuals who observed the game. Contrary to the findings for the other two brands, this indicates that those respondents who played the video game had a lower corporate image of the Compaq brand manufacturer than those who observed the game.

A one-way analysis of variance was again employed to test the significance of the difference between the means. From this it is concluded that there is no significant difference in the corporate image of the Compaq brand manufacturer between
individuals who played the video game and individuals who observed \((df=1.38; F=0.22; p>.05)\).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.37</td>
<td>1.00</td>
<td>18</td>
</tr>
<tr>
<td>Observer</td>
<td>4.30</td>
<td>0.91</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.33</td>
<td>0.94</td>
<td>38</td>
</tr>
<tr>
<td>Qantas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.57</td>
<td>1.28</td>
<td>19</td>
</tr>
<tr>
<td>Observer</td>
<td>4.28</td>
<td>1.07</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>4.42</td>
<td>1.18</td>
<td>39</td>
</tr>
<tr>
<td>Compaq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Player</td>
<td>4.10</td>
<td>1.27</td>
<td>20</td>
</tr>
<tr>
<td>Observer</td>
<td>4.27</td>
<td>1.05</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>4.18</td>
<td>1.16</td>
<td>39</td>
</tr>
</tbody>
</table>

\(n=40\)

Overall, the results indicate that there is not a significant difference in corporate image of a brand manufacturer between individuals exposed to a brand or product placement while playing a video game and those exposed to a placement while observing a game. The difference between the two groups is so small as to also lack practical significance.
3.4.2.5 Test 5: Effect on Brand Attitude and Corporate Image - Use Simulated Placements Versus Peripheral Placements

Test five examined whether a placement simulated in use in a video game or placed peripherally in a game would have an affect on an individual’s attitude to the brand and corporate image of the brand’s manufacturer. To test this, only two of the three brands were included in the analysis: Holden, which was the brand of vehicle driven in the game and Qantas, which represented a peripheral brand placement. Compaq was excluded since it was not featured in the game. Brand attitude and corporate image were measured for the two experimental groups, that is, players (n=20) and observers (n=20). These were combined to create one group: those exposed to the video game. Unlike in the case of the previous tests, the purpose was to detect a difference between the two different types of placements, rather than between groups of respondents. The control group was excluded from the analysis since these respondents were not exposed to the game and therefore neither placement type.

Attitude to the brand and corporate image of the brand manufacturer were measured independently. Recall that attitude to the brand was measured on a 3-item, 7-point Likert-type scale, where one represented a lower attitude and 7 a higher attitude. Corporate image was measured on a 5-item, 7-point Likert-type scale, with 1 representing a lower corporate image and 7 representing a higher corporate image. The means discussed below are the results of the summated scales. The results of the analysis for each construct are discussed next.

To measure the difference in attitude to the use simulated placement brand (Holden), and attitude to the peripheral placement brand (Qantas), the means were compared. These are shown at Table 3.11. The comparison revealed the means were different, with a mean of 4.40 for the use simulated placement and 4.64 for the peripheral placement. This indicates that respondents exposed to the game (both players and observers) had a lower attitude to the brand simulated in use, than the brand placed peripherally in the game.
Table 3.11 Means of the Attitude to the Brand for the Use Simulated and Peripheral Placement

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use simulated placement</td>
<td>4.40</td>
<td>1.50</td>
<td>40</td>
</tr>
<tr>
<td>Peripheral placement</td>
<td>4.64</td>
<td>1.60</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>4.52</td>
<td>1.55</td>
<td>80</td>
</tr>
</tbody>
</table>

To test whether the means were significant, a one-way analysis of variance was conducted. The results indicate that there is not a significant difference between attitude to the use simulated brand and attitude to the peripheral brand for individuals exposed to the video game, at a 95% confidence level ($df=1,78; F=0.48; p>.05$). The results are presented in Table 3.12.

Table 3.12 Results of One-Way Analysis of Variance: Attitude to the Brand by Placement Type (Use Simulated Placement Versus Peripheral Placement)

<table>
<thead>
<tr>
<th>Construct/Placement Type</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude to the Brand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use Simulated</td>
<td>1.17</td>
<td>0.48</td>
<td>0.49</td>
</tr>
<tr>
<td>Peripheral</td>
<td>187.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The corporate image for the manufacturer of the brand simulated in use was also compared to the corporate image for the manufacturer of the brand peripherally shown in the video game. As in the case of the previous analysis for attitude to the brand, this analysis included the corporate image of the brand manufacturers as reported by those respondents exposed to the video game. Comparison of the two types of placements showed a difference in means. These are presented in Table 3.13. A mean score of 4.33 was recorded for the use simulated brand, while a mean of 4.43 was recorded for the peripheral brand. Respondents exposed to the video game had a lower corporate image of the manufacturer of the brand simulated in use than of the manufacturer of the brand placed peripherally in the game.
Table 3.13 Means of the Corporate Image of the Brand for the Use Simulated and Peripheral Placement

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use simulated placement</td>
<td>4.33</td>
<td>0.94</td>
<td>38</td>
</tr>
<tr>
<td>(Holden)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peripheral placement</td>
<td>4.43</td>
<td>1.18</td>
<td>39</td>
</tr>
<tr>
<td>(Qantas)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.38</td>
<td>1.06</td>
<td>77</td>
</tr>
</tbody>
</table>

n=80

A one-way analysis of variance was used to test whether the means were significant. This revealed that there is not a significant difference between the corporate image of the manufacturer of the brand simulated in use and corporate image of the manufacturer of the brand shown peripherally, at a 95% confidence level ($df=1,78; F=0.14; p>.05$). Table 3.14 presents the results of the analysis.

Table 3.14 Results of One-Way Analysis of Variance: Corporate Image of the Brand Manufacturer by Placement Type (Use Simulated Placement Versus Peripheral Placement)

<table>
<thead>
<tr>
<th>Construct/ Placement Type</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Image of the Brand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer Use Simulated</td>
<td>0.17</td>
<td>0.14</td>
<td>0.71</td>
</tr>
<tr>
<td>Peripheral</td>
<td>95.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=80

In summary, the results indicate that there is not a significant difference in attitude to a brand which is simulated in use in a video game and one which is featured peripherally, nor is there a difference in the corporate image of a brand manufacturer for a use simulated placement or a peripheral placement. Whether a placement is simulated in use during a video game or featured peripherally in a game seems to have little effect on brand attitude or corporate image. Any difference is likely to lack practical significance.

3.4.2.6 Test 6: Influence of Involvement

Earlier in this chapter, it was suggested that an individual’s involvement with a placement’s product category may act as a confound in any effects of exposure to the
placement on attitude to the brand and corporate image of the brand manufacturer.
To test this, an analysis of covariance was undertaken.

Involvement was operationalised with regards to car involvement and represented
the covariate in the analysis. Involvement was measured on a 6-item, 7-point Likert-
type scale, with 1 being lower car involvement and 7 higher car involvement. As the
only brand representing the car product category, Holden was used in the analysis.
Attitude to the Holden brand and corporate image of the Holden brand manufacturer
were therefore tested. The summated scales were again used to measure these two
dependent variables. Respondents in the two experimental groups, consisting of
those who played the video game (n=20) and those who observed (n=20), were
included as part of the analysis since they were exposed to product placement.

An analysis of covariance showed no statistically significant effect of involvement
on attitude to the brand ($df=1,37$; $F=0.02; p>.05$), or corporate image of the brand
manufacturer ($df=1,37$; $F=0.05; p>.05$).

3.4.2.7 Test 7: Influence of Skill Level
It was predicted that the skill level of the game player may act as a confound in any
effects of exposure to a placement on attitude to the brand and corporate image of
the brand manufacturer for both a player and game observer. Skill level represented
a covariate and was measured using a single-item, 7-point Likert-type scale, where 1
represented lower skill level and 7 represented higher skill level. Skill level referred
to the driving ability of the video game player and was reported by both players
(n=20) and observers (n=20). These two experimental groups were included in the
analysis since they received the video game treatment. Attitude to the brand and
corporate image were examined for Holden and Qantas, using the summated scales.

An analysis of covariance showed no statistically significant effect of skill level on
attitude to the brand ($df=1,37$; $F=0.02; p>.05$), or corporate image of the brand
manufacturer ($df=1,37$; $F=0.08; p>.05$).
3.4.3 Summary of Findings

Study one sought to understand the effect on consumers of brand and product placements in video games. Whether these placements would have a positive influence on brand attitude and corporate image among individuals exposed to them in a game was explored, but the findings suggest no significant effects.

Brand and product placements in the video game appeared to have no effect on attitude to the brand or the corporate image of the brand manufacturer for either game players or game observers, even when allowing for an individual’s involvement with the product category (in the case of a product placement) and a player’s skill level. Whether the placement was simulated in use during the game or in the form of peripheral advertising had no influence on attitude to the placed brand, nor the corporate image of the placed brand’s manufacturer. These findings are discussed in the following section.

3.5 Discussion of Findings

The purpose of the current study was to examine the potential for brand and product placements in video games to improve attitude to the brand and corporate image of the brand manufacturer. The results indicate neither brand nor product placements in a video game have an influence on brand attitude or corporate image, even when controlling for involvement and skill level. The following section presents explanations for the observed results, with hypotheses generated throughout the discussion.

3.5.1 An Individual’s Motivation as a Determinant of Attitudes

The current study found that consumers’ attitude to a brand and corporate image of a brand manufacturer were not higher as a result of exposure to a brand or product placement in a video game. The literature review presented in Chapter 2 highlighted that often a positive relationship is assumed, however the current study found no evidence of attitudinal effects. There are a whole host of factors that influence the attitude formation process, as introduced in section 2.8.1 and discussed in section 3.2. Recall that information processing has a determining influence on attitudinal response, which in turn is dependent on an individual’s motivation, moderated by
opportunity and ability (Batra and Ray, 1986a; Cacioppo, Harkins and Petty, 1981; MacInnis and Jaworski, 1989). The effect of video game product placement on attitudes therefore depends on the individual and their motivation to process information in this context. A lack of motivation would explain the observed results.

In the case of an ad, motivation represents an individual’s desire to process brand or company information, and is stimulated by an individual’s activated needs (Mitchell, 1981; Petty and Cacioppo, 1986a,b). Motivation, stimulated by needs, determines how an individual attends to, comprehends and evaluates information, therefore it affects the direction of attention and intensity of information processing (Mitchell, 1981; Petty and Cacioppo, 1986a,b). Motivation moderates the link between ad exposure, processing and attitude formation (Batra and Ray, 1985, 1986b; Greenwald and Leavitt, 1984; Krugman, 1965; Mitchell, 1981; Park and Young, 1986; Petty and Cacioppo, 1986a,b; Rossiter and Percy, 1985).

Celsi and Olson (1988), Petty and Cacioppo (1986a,b), and Zaichkowsky (1985) have demonstrated that the relevance of brand information to activated needs stimulates processing. In other words, when an individual is presented with a message such as an advertisement, they are likely to pay voluntary attention to that information if it is relevant to their chosen tasks (Kahneman, 1973). An individual has high motivation when a message relates to their goals and needs, and is therefore relevant. If other motivations are present and other goal objects are the focus of their attention, it is likely motivation to process information will be low (Eysenck, 1984; Kahneman, 1973; Mitchell, 1981). An individual may even avoid such information which is contradictory and potentially an impediment to their goals, as has been shown to be the case in both traditional and interactive media such as the internet (Cho and Cheon, 2004; Speck and Elliott, 1997).

In the context of a game, it was anticipated that players may engage in brand processing when presented with a brand or product placement relevant to the game playing task and to the goal of winning the game (such as a use simulated placement). In such an instance, it was thought higher brand processing motivation may have meant the allocation of attention to the placement and subsequently its processing, leading to the formation of stronger attitudes than could occur for a game.
observer. The findings of this study, however, seem to indicate that both players and observers engage in little to no processing of brand or product placement information.

Limited brand processing could be explained by the fact that an individual’s primary motivation for playing a game is to gain an enjoyable experience. Sweetser and Wyeth (2005) contend that player enjoyment is the single most important goal for games. Indeed, research conducted by the Entertainment Software Association (ESA) reveals that 81% of the most frequent video gamers play games because they are fun (ESA, 2004a). This would seem to suggest that it is the game play itself which is a gamer’s primary goal object, and therefore the focus of their attention. If this is the case, then it is likely a gamer’s motivation to process brand and product placement messages within this context will be low, due to the existence of other motivations at the time of exposure. An individual’s attention and processing capacity is therefore likely to be directed to the game play, thereby precluding any brand information processing. Also, by their very nature, video games demand and automatically elicit this attention. This may mean that, even for observers, attention is directed to the play. If the attitudinal impact of persuasive communications depends on the information processing efforts of the audience, then it is likely in a video game where motivation is low that attitudinal effects will not be demonstrated. In order to test this argument, the following hypothesis is presented:

\[ H1: \text{An individual exposed to brand and product placement in a video game will report a higher Attitude to that Brand (ABR) than a similar individual who has not been exposed to the placement.} \]

The current study also found that video game product placement does not influence corporate image. If a lack of motivation to process brand information results in no effect on attitudes towards brands or products placed in a video game, then it would be logical to assume that there will be no effect on the image of the brand manufacturer. Adopting the view that corporate image can be affected by mere exposure (Gatewood, Gowan and Lautenschlager, 1993), the following sub-hypothesis is presented:
H1a: An individual exposed to brand and product placement in a video game will report a higher Corporate Image (CI) of that brand's manufacturer than a similar individual who has not been exposed to the placement.

3.5.2 Opportunity and Ad Factors as Moderators of Attitudes

Study one found that whether a placement is simulated in use in a video game or is featured peripherally appears to have no influence on attitude to the brand or corporate image of the manufacturer. It was anticipated that the likelihood of brand information processing may have been greater in the case of a product placement simulated in use, due to the level of opportunity afforded. As discussed in section 3.2, brand processing is dependent on an individual’s level of motivation, but this in turn is moderated by opportunity and ability.

Opportunity refers to the circumstances of brand exposure and whether these are conducive to brand processing (Houston and Rothschild, 1978; Richins and Bloch, 1986). For example, when an individual is distracted, the sound is too low, or a message is presented too quickly, opportunity will be low. As illustrated in Figure 2.5, opportunity moderates the impact of motivation on attention and processing capacity, thereby influencing attitude formation (MacInnis and Jaworski, 1989). Therefore, whether an individual attends to a message and actively thinks about and evaluates it, depends on their motivation level and whether they have sufficient opportunity, or in other words, whether it is physically possible for the message to be processed (Shimp, 2000).

Ad factors are capable of influencing processing opportunity, and have been shown to influence brand recall in product placement investigations (see, for example, Gupta and Lord, 1998; Nelson, 2002; Sabherwal, Pokrywczynski and Griffin, 1994; Steortz, 1987). Product placement was recognised earlier as being classified along a number of dimensions. It has been demonstrated that in traditional media, brands integrated with the plot of a story elicit the highest recall (Sabherwal, Pokrywczynski and Griffin, 1994; Steortz, 1987), while visual placements elicit the lowest (Gupta and Lord, 1998; Steortz, 1987). Even in games, prominent placements have been found to generate higher recall than subtle ones (Grigorovici and Constantin, 2004; Kuhn, Pope and Voges, 2007; Schneider and Cornwell, 2005). It is likely this is due
to the varying levels of opportunity provided in the case of each type. It was therefore anticipated ad factors would influence the opportunity presented for processing brand and product placements in a video game, with higher opportunity and hence stronger attitudinal effects expected for use simulated product placements.

Earlier in section 2.4.2, use simulation was proposed as a new placement dimension to reflect the interactive nature of games. Use simulated placements allow players to interact with brands and even use them, thereby providing a direct product experience, essentially a virtual product trial. For example, in car racing game *V8 Supercars* the brands of real auto manufacturers are available for players to select and drive on the virtual racetrack, under the direction of a game character (which can be a real race car driver). The way a gamer uses a product or brand in a game can therefore be considered in the context of role-taking.

As it relates to traditional advertising, role-taking occurs when an individual relates brand information to himself or herself, thereby placing them into an ad or product experience (Krugman, 1965). It makes the consequences of product use (or nonuse) become more real for the individual, because essentially they are engaging in a vicarious product trial (Puto and Wells, 1984). This trial-based experience has been found to have a strong effect on brand beliefs (Smith and Swinyard, 1982, 1983) and can result in the development of attitudes that are more confidently held, more resistant to attack and more enduring (Fazio and Zanna, 1981). For role-taking transformation to occur however, several conditions must be met, one of which is a condition of high processing motivation since role-taking requires the allocation of considerable resources (Aaker, Stayman and Hagerty, 1989; Holman, 1984; MacInnis and Price, 1987). The preceding section highlighted that gamers appear to lack motivation, hence attitudinal effects as a result of role-taking are unlikely, but the use of products was anticipated to present a condition of higher opportunity.

The study found that whether or not a placement is simulated in use has no effect on attitudes. This may be due to a situation where it is the circumstances of exposure which reduce opportunity (MacInnis and Jaworski, 1989). These circumstances may have distracted gamers from brand and product placements, thereby eliminating the potential for ad factors to have any influence. Opportunity would have been weak,
which would have further reduced a gamer’s motivation to process brand and product placement information in the game. As argued previously, this motivation already seems to be low, but with limited opportunity, the potential for attention and capacity to be allocated to game placements would have been further decreased. This would prevent any influence on attitudes.

The explanation concerning the circumstances of exposure in a game and their corresponding impact seems plausible. As already identified, in a game context a player’s attention is likely to be focused on the game play. This could therefore serve as a distraction which would reduce processing opportunity. A second factor may be the presence of other people at the time of play, which could place further constraints on processing capacity and attention. Often people play video games in groups (ESA, 2004c). In fact, a survey conducted by the Entertainment Software Association (ESA, 2004a) found 42% of people play games because they are an interactive social experience that can be shared with family and friends. This is supported by psychology research (presented at section 1.3.5), which has found that video game play is indeed a social activity that tends to involve more than one individual. If this is the case, and attention is allocated to secondary tasks such as conversation, there is the potential for further distraction from brand and product placements. It was observed in the current study that subjects spoke to one another, with game observers offering words of encouragement and instructions to players.

A third and final condition of low opportunity in a video game may also be created as a result of the sheer number of stimuli present. In a typical video game a number of different types of placements are featured, especially in the case of a sports game, which may imitate the sponsorship which appears at a real event. A video game is a competitive, dense-with-messages environment, featuring multiple stimuli and multiple brands. Psychology research has shown that information processing is reduced when the number of environmental stimuli exceed an optimal level (Cummings, O’Connell and Huber, 1978; Schroder, Driver and Streufert, 1976; Streufert and Streufert, 1978; Suedfeld, 1978). This is likely to be the case in a video game. The number of placements may also contribute to perceptions of ‘advertising clutter’ (Ha, 1996; James and Kover, 1992; Speck and Elliott, 1997) resulting in ad avoidance (Cho and Cheon, 2004; Elliott and Speck, 1998) so as not
to affect already strained cognitive resources. Further, with product placement there are several sensory dimensions present. When combining this with the sensory immersion of a video game, it is likely gamers will be too overwhelmed to process any brand information.

Low opportunity as a result of all these factors, as well as a lack of motivation, means attitude change stemming from placements in video games is unlikely, lending further support to Hypotheses 1 and 1a (H1 and H1a). The previous discussion highlights, however, that where there are fewer brands, opportunity could potentially be higher. Advergames may therefore present a different set of conditions.

Recall from Chapter 1 that there are two main ways games can be used for product placement: brands can be incorporated into existing games, or brand-centred games can be created. In an advergame, it is likely the opportunity afforded for information processing may be greater than in the case of a video game, simply because the brand emphasis is greater. Here, typically only one brand or product is featured, which plays a central role in the game plot and can be used. Other types of placements may also be evident, but the distinguishing feature of an advergame is the absence of competing brands (or at least a reduced emphasis on them). This is significant, because processing opportunity should be increased as a result.

With an increase in opportunity, the potential for attention and capacity to be allocated to advergame placements may be increased. This may explain why Winkler and Buckner (2006) and Mallinckrodt and Mizerski (2007) reported positive effects of advergame placements on recall and brand preference respectively. Players however should still lack strong motivation for brand and product placement message processing because, like in a video game, their primary motivation for playing is to gain a ‘fun’ experience, not to necessarily seek out some type of product information. This focus may leave a player with insufficient cognitive resources to engage in extensive processing, which is necessary for greater attitude change (Olson and Thjømøe, 2003), but with increased opportunity, it is possible advergame placements may be processed at some level. Even if this processing occurs at a low level of consciousness, the placements may still be capable of
generating an affective response or influencing judgments about the brand/organisation (Balasubramanian, Karrh and Patwardhan, 2006; Sengupta, Goodstein and Boninger, 1997). It must be recognised, however, that attitudes affected in this way are unlikely to be strongly held or enduring (Petty and Cacioppo, 1983). Sponsorship research has found that billboards at sports events (referred to as field sponsorship) can influence brand attitudes, although this can be weak because consumers are distracted from processing activities by the event itself (Lardinoit and Derbaix, 2001). As in the case of a video game, gamers are likely to be distracted by other activities when playing an advergame. Attitudinal effects stemming from advergame placements are therefore possible, although likely to be weak. The following hypotheses are therefore proposed:

\[ H2: \text{An individual exposed to brand and product placement in an advergame will report a higher } A_{BR} \text{ than a similar individual who has not been exposed to the placement.} \]

\[ H2a: \text{An individual exposed to brand and product placement in an advergame will report a higher CI of that brand's manufacturer than a similar individual who has not been exposed to the placement.} \]

3.5.3 Ability and Product Involvement as Moderators of Attitudes

In addition to opportunity as previously discussed, ability also affects the level of processing an individual can achieve, because like opportunity, it moderates the impact of motivation on attention and processing capacity (Greenwald and Leavitt, 1984). Ability refers to whether an individual is familiar with message claims and is capable of processing them (Shimp, 2000). If they are not, inadequate prior knowledge prevents the meaningful analysis of information in memory, or if prior knowledge can not enter working memory, encoded ad information may not be interpreted (MacInnis and Jaworski, 1989). Therefore, if an individual has limited product knowledge or experience (Anderson and Jolson, 1980; MacKenzie, 1986), the message is difficult (Yalch and Elmore-Yalch, 1984), or ambiguous information is presented (Edell and Staelin, 1983), ability will be constrained. Limited intelligence and education can also reduce processing ability (Anderson and Jolson, 1980).
If a product placed in a game is relevant and of strong interest for an individual, and they possess knowledge about it, the individual’s motivation to process this information should be increased, thereby increasing the propensity for attitude change. In such an instance an individual’s product involvement should enhance processing ability. Involvement is an internal state of arousal in response to some sort of stimulus (Andrews, Durvasula and Akhter, 1990; Mittal, 1995; Zaichkowsky, 1985). It is a component of motivation and has been considered in recent research in the context of the broader motivation construct (see, for example, Batra and Ray, 1985; Park and Mittal, 1985; Petty and Cacioppo, 1986a,b). Involvement plays a pivotal role in persuasion and attitude formation (Eagly and Chaiken, 1993; MacKenzie and Lutz, 1989; Petty, Wegener and Fabrigar, 1997) as it affects ability, attention and comprehension effort (Celsi and Olson, 1988), and impacts on an individual’s motivation to process information overall (Balabanis and Reynolds, 2001).

Involvement was identified as a potential confound in the current study. It was anticipated that if a gamer was familiar with the product category for a placement in a video game, they may become more involved in the placement message. Their involvement with the product was expected to increase the likelihood that the product placement would attract their attention and be processed, because in such an instance they would possess the motivation and prior knowledge to do so. The findings of study one, however, demonstrate that involvement does not influence the relationship between video game product placement and attitudes. This is unlikely to be due to inadequate prior knowledge on the part of respondents constraining ability, because subjects should have possessed the knowledge necessary for brand information processing. Brands with which respondents would be familiar were selected for investigation in the study, and the subjects themselves were of a higher education, which should have enhanced ability (Anderson and Jolson, 1980). Instead, it may be the case that prior knowledge was unable to enter working memory, thereby preventing the processing of brand information.

Ability may have been constrained due to involvement in the game itself. This explanation is consistent with conclusions drawn in relation to the former findings, and may explain why Grigorovici and Constantin (2004) found higher game
engagement reduces brand recall, recognition and preference (it should be noted that recall in the current study was also not particularly strong). An individual’s involvement with the game may reduce ability (the same as it does opportunity) and thereby further constrain the relationship between motivation, attention and capacity. Therefore, even if a product placed in a game is relevant for an individual, their motivation to process this information may not be increased, because other goal objects for processing are more prevalent. As previously discussed, a player’s primary motivation at the time of ad exposure is to play and conquer the game. Attention, defined as the allotment of an individual’s mental activity to tasks being performed (Moates and Schumacher, 1980), is therefore likely to be directed to the game play. The interactive and vivid nature of games (highlighted at section 2.6.2) may also elicit attention, thereby increasing involvement in game play of not only a player but also an observer. This lends further credibility to the explanation as to why neither players nor observers (who possess different levels of involvement in the game in terms of play) reported different attitudes to placed brands or to their manufacturers in the current study.

These findings appear to be consistent with those in the sponsorship literature. While sponsorship research has found that involvement can positively affect memory, the results have been less positive in terms of attitude effects. In the case of the former, Pham (1992) showed that a high degree of consumer involvement and a stimulating event positively influence consumer memory. This may explain why Nelson (2002) and Schneider and Cornwell (2005) found players are able to recall brands in a video game, particularly since subjects in their studies were self-selected game players who probably possessed a level of involvement in games generally. In terms of attitudinal effects, however, McDaniel (1999) found that a match-up between event and product involvement has no effect on brand attitude, while Lardinois and Derbaix (2001) found field sponsorship has only a weak influence. Consumers’ event involvement has been shown to prevent message involvement, causing some consumers to not even notice field sponsorship (Lardinois and Derbaix, 2001). Essentially this occurs because consumers can be distracted from brand processing activities by the event itself. It may be the case that in a game, even if brand or product involvement is high, gamers will be so involved in the game
play they will be prevented from becoming involved in a brand or product placement message.

One further explanation for the findings is that, if the product placement message was difficult and its information ambiguous, processing ability would have been further constrained (Edell and Staelin, 1983; Yalch and Elmore-Yalch, 1984). This seems plausible considering the nature of this form of communication. Product placements are designed to be unobtrusive and to appear non-commercial (Balasubramanian, 1994). As a result, gamers may not recognise them as ads, and may find it particularly difficult to process them due to the nature of the message itself, not just because of the environment in which they are placed. Indeed, in other media such as television, it has been found that consumers might not assign promotional meanings to placements (La Pastina, 2001). If this is the case in a game, the potential for attitude change will be further reduced. Advergames, however, may offer greater potential for processing to occur. In an advergame, the placement sponsor’s commercial motivation may not be so well disguised, since the brand plays a prominent role in the game. Processing ability may therefore be enhanced, but is unlikely to be high for the reasons discussed earlier.

The preceding discussion lends further support to H1 and H1a, as well as H2 and H2a. With weak ability, as well as a lack of motivation and low opportunity, it is unlikely attitudinal effects will be evident from any placements in a video game in support of H1 and H1a. In the case of an advergame, where there is weak motivation but higher opportunity and ability, attitudinal effects are possible, but are likely to be weak in support of H2 and H2a.

3.5.4 Influence of Skill on Attitudes

As in the case of involvement, a player’s skill level in a video game was identified as a potential confound that could influence the response to brand and product placements in a game, in terms of attitude to the brand and corporate image of the brand manufacturer. The findings however showed that skill level has no effect.

The skill level of subjects in this study was poor with a mean of 2.88 observed, where one represented lower skill level and seven higher skill level. The most
plausible explanation as to why this had no influence on the relationship between product placement and attitudes is likely to be due to the constraints skill level placed on cognitive processing. Poor skill would indicate the game play was difficult for respondents, so it is likely this would have placed higher demands on processing resources. As discussed earlier, when demands on processing are high, consumers may lack the cognitive capacity for the processing of ads (Bezjian-Avery, Calder and Iacobucci, 1998), or in this case, product placement messages. In the current study, players and observers would have been forced to concentrate even harder on the game play, leaving them with insufficient cognitive capacity for the processing of brand and product placements. Consistent with the other findings, opportunity and ability would have been constrained, thereby negating any potential for skill level to influence attitudinal responses.

As already established, involvement in a video game or advergame is likely to serve as a distraction from brand and product placement messages. The findings of the current study indicate poor skill level will probably reinforce this. In support of the earlier hypotheses, strong attitude change stemming from placements in games is therefore unlikely.

3.5.5 Influence of Involvement, Skill Level and Interactivity

The discussion up to this point indicates that brand and product placements are unlikely to influence attitudes toward the brand or brand manufacturer in the case of a video game, and are likely to have only a weak influence in an advergame. It would appear that individual, situational and message characteristics probably present a condition where low motivation, opportunity and ability will prevent information processing and subsequently attitude change stemming from placements in the game medium. The relevance of these factors is also recognised by Balasubramanian, Karrh and Patwardhan (2006). Several confounds, however, may influence the relationship between game placements and attitudes, and the potential for any effects to be demonstrated.

It was highlighted earlier that a gamer’s involvement with a product category for a placement may not enhance their ability to process the placement message, because constraints on cognitive resources may prevent this prior knowledge from entering
working memory. It was therefore concluded that the difficulty associated with the placement message and with the gaming environment may prevent any positive effects of involvement being demonstrated, consistent with the findings of the current study. It is recognised, however, that the greatest potential for any attitudinal effects to be demonstrated is amongst those who exhibit a level of product involvement.

The more knowledgeable an individual is of a particular domain, the more able they are to activate the interpretation of new related information from memory (Roy and Cornwell, 2004). Although study one pointed to the fact that gamers may be unable to access prior knowledge, the potential for this to occur is greatest among involved individuals, because their processing capacity is higher. Attitudes may not necessarily be strongly influenced, as highlighted in section 3.5.3, but objects toward which people hold highly accessible attitudes are more likely to attract attention. Roskos-Ewoldsen and Fazio (1992) highlight this may even be the case when an object is presented in a complex visual display. Involvement may also serve as a prime, which not only draws attention to the placed brand, but prompts a more confident attribution of the commercial intent behind the placement (Karrh, McKee and Pardun, 2003). For a very involved individual, this may enhance their ability to access prior brand knowledge.

Strong product involvement may therefore increase the likelihood of placement message involvement and encourage information processing (Laczniak and Muehling, 1990). In support, Balasubramanian, Karrh and Patwardhan (2006) propose brand familiarity is an individual-level factor that may influence information processing. Karrh (1994) identified this as a moderating variable that contributes to memorability, while Castleberry and Ehrenberg (1990) found brand usage and experience strongly influence brand image. It is therefore hypothesised that involvement will co-vary with any main effects of product placement on attitudes.

Involvement in the game was offered earlier as an explanation as to why product involvement had no influence on responses to placements in the current study. It was concluded that this may have served as a distraction, which prevented placement message processing. This is a plausible explanation since the skill level of
respondents was low. Poor skill may have therefore forced gamers to focus their attention on the game play, which is likely to have constrained opportunity and ability. However, when skill level is strong, the complexity and difficulty of the gaming environment may be reduced, freeing up cognitive resources that could be allocated to placement processing. In support of this, Schneider and Cornwell (2005) found a positive relationship between previous game experience and recall ability. One further explanation offered for this finding is that past exposure may have served as a prime, which attracted attention to the placements. Investigating skill level may therefore remove any confounds associated with prior exposure.

It may be the case that not only is an individual’s skill level associated with a specific game relevant, but so too their proficiency in playing games generally. Regular players may be more sensitive to the game environment, and hence more likely to notice placements. They may also be more capable and willing to process them. This may explain the positive effects reported in other investigations of game placements, which have studied regular users (see, for example, Bambauer, 2006; Nelson, 2002; Schneider and Cornwell, 2005). Sponsorship research has also found that highly involved fans at sporting events can notice field sponsorship better than those who are not involved, because they are more knowledgeable and thus more sensitive to the environment (Celsi and Olson, 1988; Lardinoit and Quester, 2001; Pham, 1992). As a result of their involvement, these fans strive to increase their expertise associated with the sport and seek out any information related to it (Lardinoit and Derbaix, 2001; Richins and Bloch, 1986). The same may be true in the context of games.

An individual’s skill level in relation to the game and the medium in general may therefore act as confounds in any main effects of product placement on attitudes. Skill level may also have an influence due to its ability to impact flow, which in turn may generate emotional responses capable of influencing processing motivation (Arnold, 1960). With flow comes more positive subjective experiences including positive affect (feelings) and satisfaction (Csikszentmihalyi, 1977). In the case of computer-mediated environments, higher degrees of pleasure and involvement during computer interactions have been shown to lead to concurrent subjective perceptions of positive mood and emotion (the two components of affect) (Starbuck
and Webster, 1991; Webster and Martocchio, 1992). In a game context, it has been found to positively influence attitude toward the game, which in turn can positively affect attitude toward the brand (Bambauer, 2006). For flow to occur, however, there are certain conditions that must be satisfied, one of which relates to the skill of an individual in an interactive environment. Hoffman and Novak (1996) highlight that consumer skill in functioning in a virtual environment, the challenges of that environment and the presence created as a result of immersion directly affect flow. Therefore, when an individual focuses their attention on the interaction, the interaction is fun, and there is a balance between this challenge and an individual’s skills, it is likely flow will occur (Csikszentmihalyi and LeFevre, 1989; Hoffman and Novak, 1996).

Flow is a psychological state facilitated by medium interactivity (Hoffman and Novak, 1996). This points to one further covariate that may influence the relationship between game placements and attitudes: interactivity. Like the internet, games facilitate interactive communication, which allows for the active participation of consumers. Due to this interactivity, consumers have more control over the messages they receive and the ability to customise these according to their needs (Liu and Shrum, 2002; Roehm and Haugtvedt, 1999). The audience is therefore engaged.

The effects of interactivity remain unclear due to inconsistencies in the literature as to how it should be defined and operationalised (see, for example, Ariely, 2000; Bezjian-Avery, Calder and Iacobucci, 1998; Blattberg and Deighton, 1991; Coyle and Thorson, 2001; Deighton, 1996; Ghose and Dou, 1998; Ha and James, 1998; Rafaeli and Sudweeks, 1997; Shih, 1998; Steuer, 1992; for a complete discussion see McMillan, 2002). Plus, its effects appear to be dependent on the situation and the user (including their goals, cognitive processing of information, attention, pre-existing brand attitudes, level of involvement, product knowledge and experience) (Balabanis and Reynolds, 2001; Bezjian-Avery, Calder and Iacobucci, 1998; Hoffman and Novak, 1996; Liu and Shrum, 2002). Some researchers have found interactivity increases processing motivation (Sicilia, Ruiz and Munuera, 2005), attracts attention, positively influences user attitudes (Cho and Leckenby, 1999; Wu,
and facilitates deeper cognitive processing (Liu and Shrum, 2002). Others have demonstrated detrimental effects for advertising effectiveness.

Bezjian-Avery, Calder and Iacobucci (1998) found no effect on attitudes of interactive ads online, concluding that when demands on processing are high, consumers allocate less time to viewing these ads and lack the cognitive capacity necessary for their processing. This is supported by Li, Edwards and Lee (2002) who suggest interactive ads interrupt cognitive processes, particularly when an individual is engaged in goal-oriented behaviour. Interactivity has therefore been suggested to only affect those who are less involved (Sundar et al., 1998), with some researchers warning it is necessary to target viewers when their cognitive effort is low (Edwards, Li and Lee, 2002). This may result because interactivity constrains processing opportunity and ability.

Interactivity may also be capable of eliciting emotional responses. Both cognition and affect (made up of mood and emotion) are two important constituents of attitude (Dillon, Mulani and Frederick, 1984; Edell and Burke, 1987; Holbrook, 1982, 1986; Isen, 1987; Leigh, 1984; Obermiller, 1985; Pieters and Van Raaij, 1988). Much of the previous discussion has focused on message-based persuasion and cognition, but emotion-based persuasion can also occur, indicating that affect too plays a pivotal role in the attitude formation process. While emotion can represent reactions to the ad message itself and is therefore a consequence of processing, it can also serve as an input to this process, capable of prompting an attitudinal response (Shimp, 2000).

The theory of emotional states and the misattribution hypothesis was first proposed by Schachter and Singer (1962) and Schachter (1964) who suggested an emotional state is the result of an interaction between physiological arousal and recognition about the arousing situation, with the intensity of an emotion being a function of the prevailing level of excitation. Zillmann (1971, 1983, 1991) extended this work to investigate the effects of film on beliefs and emotions, and specifically whether emotional or suspenseful programming intensifies evaluations of subsequent commercials. He found evidence of the existence of excitation transfer.
Zillmann’s excitation transfer theory posits that residual arousal from one stimulus can combine with arousal from a subsequent stimulus, thus strengthening the affective reaction to the second stimulus. In other words, when an individual (such as a program viewer) experiences arousal and searches for cues in their environment to identify its cause, they often incorrectly attribute some of their residual arousal to other concurrently available stimuli. The evaluations of these stimuli are affected as a result, generally in the direction of the experienced mood or emotion; negative moods and emotions negatively affect evaluations of, and attitudes towards, subsequent stimuli (Axelrod, 1963; Mathur and Chattopadhyay, 1991; Prasad and Smith, 1994; Tannenbaum and Zillmann, 1975; Zillmann, Hoyt and Day, 1974), positive moods and emotions produce the opposite effect (Cantor, Bryant and Zillmann, 1974; Clark, 1981; Goldberg and Gorn, 1987; Mattes and Cantor, 1982; Srull, 1983). This is similar to classical conditioning, but while classical conditioning holds that a conditioned response can be created as a result of the repeated pairing of an unconditional and conditional stimulus (such as a pleasing scene and a brand) (Staats and Staats, 1958), excitation transfer can occur after just one pairing (Pechmann and Shih, 1999). Further, classical conditioning requires the stimuli to be paired within seconds, but the excitation transfer theory posits that residual excitation can endure for several minutes (Cantor, Mody and Zillmann, 1974) and hence does not require the stimuli to be paired so promptly.

Based on the excitation theory then, one might assume that if a game positively arouses the emotions of gamers, this positive emotion could transfer to brand and product placements in the game, thereby intensifying evaluations of the brands and their manufacturers. This seems plausible, as games are designed to engage players in an inherently enjoyable form of entertainment. Studies have linked game play to physiological arousal and affective experience (see, for example, Anderson and Bushman, 2001; Grigorovici, 2003), with players found to report strong emotions being experienced both during and after play (Molesworth, 2006). It is suggested that emotion generated may occur through the interactivity of the game. This is a key characteristic, which makes games even more arousing than film or television. Psychological responses stemming from interactivity, such as presence, have also been found to be arousing in a game context (Grigorovici and Constantin, 2004).
Despite its importance as a distinguishing characteristic of the game medium, not a single study has directly investigated interactivity in games. Research has explored psychological responses to this environment attribute such as presence (Grigorovici and Constantin, 2004; Nelson, Yaros and Keum, 2006) and flow (Bambauer, 2006), but no studies have been reported of players’ perceptions of interactivity and its corresponding influence on them. The previous discussion highlights that in a game, where players are involved in the play, interactivity may preclude placement processing, but it may be capable of generating an emotional response which could influence attitudes. It is therefore anticipated that interactivity may have a confounding influence.

Based on the preceding discussion, the following hypothesis is proposed:

\[ H3: \text{Any main effect of exposure to brand and product placement in a video game or advergame on } A_{BR} \text{ and CI of the brand's manufacturer will be influenced by:} \]

- an individual's involvement with the product category
- an individual's skill level in the game
- an individual's skill level in relation to the medium generally, and
- the game's perceived level of interactivity.

### 3.6 Conclusion

In summary, the major finding of study one is that, although brand and product placements in a video game can influence brand recall, they have no effect on gamers’ brand attitudes or corporate image. The research indicates both game players and observers may lack the motivation to process brand and product placement messages, but this is likely to be further constrained due to the limited opportunity and ability afforded for information processing in a game context. As a result, it does not matter whether the gamer is a player or an observer, or whether the placement is simulated in use or featured peripherally, attitude to the brand and corporate image of the brand manufacturer are not affected. Likewise, gamer involvement in a placement’s product category and player skill level have no influence on this outcome.
The absence of effects may be explained by the fact that gamers are distracted from brand and product placements due to their focus on video game play, which is reinforced by characteristics of the medium. As a result, the motivation, attention and processing capacity of players and observers appears to be adversely affected, thereby precluding the processing of brand and product placement messages, and eliminating the potential for attitude formation. The impact of motivation on attention and processing capacity may be further weakened as a result of limited opportunity and ability, making video gamers not only unwilling, but also unable, to attend to and process placement information. Video games are vivid, interactive and involving, causing them to differ from other media in the extent of processing demands and information load they impose on consumers. This may exceed the limit for any brand information processing to occur. The findings of the current study suggest it is the very characteristics of the video game medium and the game playing experience which marketers have assumed will produce powerful effects, that may actually inhibit the message processing required for attitude formation.

The absence of attitudinal effects for both brands and their manufacturers is probably also partly attributable to the characteristics of product placement. The nature of product placement as an unobtrusive form of communication appears to prevent its impact on attitudes in a video game context. The current study suggests their unobtrusive nature serves to further limit the potential for gamers to dedicate attention and processing resources to them.

### 3.6.1 Summary of Hypotheses

Based on the findings of study one, a slightly modified research question has emerged:

> What is the effect of brand and product placements in games on the consumer’s response in terms of attitude to the brand and corporate image of the brand manufacturer?

While study one examined the influence of placements in video games specifically, the findings point to the need to investigate an advergame also. A number of hypotheses have been developed, resulting from analysis of the findings of study one and a review of the extant literature concerning product placement, as well as other
related marketing communications areas such as advertising, interactive marketing and sponsorship. Information has also been drawn from the consumer behaviour discipline. The hypotheses are as follows:

**H1**: An individual exposed to brand and product placement in a video game will report a higher Attitude to that Brand ($A_{BR}$) than a similar individual who has not been exposed to the placement.

**H1a**: An individual exposed to brand and product placement in a video game will report a higher Corporate Image (CI) of the brand's manufacturer than a similar individual who has not been exposed to the placement.

**H2**: An individual exposed to brand and product placement in an advergame will report a higher $A_{BR}$ than a similar individual who has not been exposed to the placement.

**H2a**: An individual exposed to brand and product placement in an advergame will report a higher CI of the brand's manufacturer than a similar individual who has not been exposed to the placement.

**H3**: Any main effect of exposure to brand and product placement in a video game or advergame on $A_{BR}$ and CI of the brand’s manufacturer will be influenced by:
- an individual's involvement with the product category
- an individual's skill level in the game
- an individual's skill level in relation to the medium generally, and
- the game’s perceived level of interactivity.

It is proposed that product placement in video games will not affect brand attitudes and corporate image, but that placements in advergames will have a small influence, depending on involvement, skill level (in relation to the game specifically and medium generally) as well as perceived interactivity. The conceptual model for this research, developed as an outcome of the literature review and pilot study, is summarised at Figure 3.2. This model depicts the key variables and the relationships between them, which will be explored in study two.
Figure 3.2 Conceptual Framework for the Impact of Product Placement in Games

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Potential Confounds</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video game product placement</td>
<td>Involvement</td>
<td>Brand attitude</td>
</tr>
<tr>
<td>Advergame product placement</td>
<td>Skill level in the game</td>
<td>Corporate image</td>
</tr>
<tr>
<td></td>
<td>Skill level in relation to the medium</td>
<td></td>
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<tr>
<td></td>
<td>Perceived interactivity</td>
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Source: Developed for this research
4.0 MAIN STUDY

4.1 Introduction

The previous chapter presented details of the first investigation of the influence of video game product placement on brand attitudes and corporate image. That investigation revealed no effects of use simulated or peripheral placements on players’ or observers’ attitude to the brand or image of the brand manufacturer. As the only study performed in this area, however, it is possible that the effects observed (or lack of) are specific to the particular laboratory context in which the data were collected. This necessitated validation of the findings in the field.

Chapter 4 presents a second study to test the hypotheses derived from the pilot. This research represents a replication of study one, and investigates both a video game and an advergame, as well as several potential confounds that may affect the relationship between placements and attitudes. The method for testing these relationships varies, in terms of the type of experiment employed; a field experiment is used to address the limitations of the previous study. Details of the research method used for testing the hypotheses and results of the data analysis are presented in this chapter. The findings are discussed, before overall conclusions are drawn in Chapter 5.

4.2 Rationale for Study Two

Most academic research performed on placements to date is laboratory-based. The majority of product placement studies have sought to measure consumer responses in contrived settings and under artificial conditions (notable exceptions include Bambauer, 2006; Ong and Meri, 1994; Russell, 2002). The disadvantage of laboratory experiments is that external validity tends to be lower, due to the artificiality of the environment. It can therefore be difficult to generalise results to the real world (Bryman, 2004; Calder, Phillips and Tybout, 1982; Lynch, 1982). There is a risk of reactive error where respondents may react to the situation itself rather than to the treatment (Hair, Bush and Ortinau, 2000), and demand artifacts where respondents may attempt to guess the purpose of the experiment and respond accordingly (Malhotra et al., 2004). Both pose a threat to valid inference in
laboratory research (Allen, 2004). These issues are particularly problematic in the case of product placement, where awareness of the persuasion attempt is naturally lower than for other types of communication, such as advertising. This is a confound that can be introduced by the researcher, and which may affect information processing (Friestad and Wright, 1994).

Product placement practitioners tend to favour field research (Balasubramanian, Karrh and Patwardhan, 2006). Field experiments, conducted under actual market conditions, lend themselves to higher external validity, allowing the practitioner to draw conclusions about phenomena in the real world. They therefore offer the potential to produce findings that will be of practical use (Graziano and Raulin, 1997). The risk however is that, in the field, it is difficult to control all the extraneous factors which may affect the relationship between the variables of interest. Achieving internal validity is therefore problematic.

The key limitation of study one relates to the fact that it suffers from a lack of external validity, since the experiment was performed in an artificial, laboratory setting. This setting was justified, as it satisfied the requirements for high internal validity and allowed separation of the cause and effect (Wells, 1993), but its selection means the ability to generalise the findings is limited. Steps were taken to create an environment as realistic as possible for exposure to the game stimulus and to reduce the risk of reactive error, but responses may be reflective of the contrived environment. A real lounge room, or even a simulated lounge room, may have produced different results.

To test the external validity of the conclusions derived from the laboratory test and to improve generalisation of the results, a field experiment was employed for study two. This addresses weaknesses and criticisms of much product placement research performed to date (see, for example, Karrh, 1995; Karrh, McKee and Pardun, 2003). Further, a key goal of the research was to not only understand the video game product placement phenomenon, but to gain new knowledge that could be applied in marketing practice. Employing a field study offered the opportunity to gain insights that will assist marketing practitioners to justify whether or not product placement in
games is a legitimate promotional strategy for influencing brand attitudes and image perceptions.

4.3 Method

The purpose of the current study is to understand whether product placement in games affects a consumer’s attitude to the brand and corporate image of the brand manufacturer. That is, this study tests hypotheses to investigate the possibility of a relationship between the independent variables (video game and advergame product placement) and dependent variables (brand attitudes and corporate image). It investigates whether attitudinal impact is possible in the case of video game or advergame placements, and whether these responses are affected by an individual’s involvement with the product category, skill level in the game, skill level in relation to the medium, and interactivity.

The following section presents details of how study two was conducted to test the hypotheses presented in Chapter 3. It provides information concerning the research design, operationalisation of variables, sample and administration of the survey.

4.3.1 Research Design

The nature of the research problem for this thesis necessitated the performance of explanatory research, in order to gain evidence of cause-and-effect relationships between the variables under investigation (Bryman, 2004). A field experiment was selected, but control was exercised over a number of variables to enhance internal validity. This was necessary since the current study is the first to investigate the attitudinal responses of consumers to brand and product information in both a video game and advergame. It is recognised, however, that this presents limitations that will necessitate replication of the research (discussed in Chapter 5).

As in the case of study one, a post-test-only, control group experimental design was employed. This design requires test subjects to be randomly assigned to either control or experimental groups, with only a post-test measure then taken from each. Justification for the exclusion of a pre-test was provided at section 3.3.1. Perhaps the strongest reason for again not employing this in study two was due to its
potential to reduce internal validity, which already tends to be weak in field research (Bryman, 2004).

Field experiments commonly fall within the category of quasi-experimental designs, as the researcher is often unable to achieve equal experimental or control groups based on randomisation, but can control other variables (Neuman, 2006). In the case of the current field experiment, randomisation was achieved. There were three groups for the study: video game, advergame and control. The two experimental groups were exposed to the relevant independent treatment (either a video game or advergame), immediately following which both groups received a post-treatment measure of the dependent variables. A measure of the dependent variables was also taken for the control group, though this group did not receive a treatment, for reasons presented in Chapter 3. As such, a 2 x 3 factorial design was used.

Post-test measurements were taken using a survey method, specifically a self-administered questionnaire distributed to respondents at the location where they were recruited, and subsequently where they participated in the experiment. The survey instrument was similar to that used in the pilot investigation (details of the survey instrument and its administration are presented at sections 4.3.4 and 4.3.5 respectively).

One key difference between the first study and the current investigation is that observation was formally employed to provide a more comprehensive triangulation perspective. The experimental design allowed for direct observation of player interaction with the game and with others present at the time of play, in a natural setting. This presented an opportunity to record respondents’ overt behaviour when playing. It was felt that deeper insights could be gained as a result, which would facilitate the interpretation of the relationship between the variables under investigation, and help explain the findings. Greater confidence in the results could therefore be achieved with the use of this technique.

The key advantage of combining quantitative and qualitative research approaches is that it allows for multi-dimensional insights to be gained that can improve accuracy (Neuman, 2006) and enhance internal validity (Burns, 2000). For the current study,
unstructured observation was used as a tool for collecting qualitative data as part of the quantitative, causal research undertaken. Consistent with the view of Hair, Bush and Ortinau (2000), it is therefore not treated as a separate research design, but is discussed in the following sections.

### 4.3.2 Treatment of Variables

There were two independent variables of interest for the current study, video game and advergame product placement. These variables related to two different stimuli:

- **Stimulus A**: Exposure to video game product placement
- **Stimulus B**: Exposure to advergame product placement

Each stimulus was directed at a different treatment group, for a total of two experimental groups. A control group was also included, but was not exposed to a stimulus. Responses to the stimuli were measured by the two dependent variables of attitude to the brand and corporate image of the brand manufacturer. Involvement with the product category, skill level in relation to the game and medium, as well as interactivity were identified as potential confounds that could affect the dependent variables. Based on a review of the literature and findings of the pilot study presented at section 3.5, it was hypothesised that consumer response may be influenced by these four factors. The following section presents details of the stimuli for study two, with justification provided for their selection. Explanation of how the other variables were operationalised is also presented.

#### 4.3.2.1 Independent Variables and Stimuli

A number of decisions were required with regards to the stimuli for the current study. The first related to the game platform to be used.

**The game platform:** The focus throughout this thesis has been on console systems used to play games. In the case of study one, the Xbox console was selected as the platform for game play on a television set. Time, geographic and financial restrictions, however, prevented the precise replication of study one using a console in a real lounge room setting. It was simply not possible to monitor game play and administer the survey in respondents’ homes. To maintain consistency, however, it
was necessary to select a comparable platform. For this reason, the decision was made to select a portable, handheld device.

Handhelds are considered a sub-sector of the console market (ESA, 2006a; PricewaterhouseCoopers, 2007). In fact, the term ‘video game’ is often used to refer to both consoles and handhelds (Alpert, 2007). Both platforms tend to offer the same games and are similar in terms of the way they are played, with consistency between the controls. Like their console counterparts, handhelds are also sophisticated, offering advanced graphics, hi-fi sound and internet capabilities. A key difference between the two, however, is that of convenience. A major advantage of handheld systems is that since they are portable, they can be played almost anywhere. This offered flexibility for the current study, in terms of execution of the field experiment and administration of the survey.

Nintendo dominates the portable gaming sector, offering several handheld systems including the Game Boy Advance, DS and extensions of the two such as the Game Boy Micro and Nintendo DS Lite. Nintendo was therefore not selected, due to the risks posed of prior exposure to the systems and of pre-existing attitudes towards the brand. The other major handheld device, Sony PlayStation Portable (PSP), was therefore selected as the platform for game play and presentation of the video game and advergame stimuli. This system was only launched in Australia in 2005. Microsoft does not yet have a handheld device and mobile phones were not considered since they represent a distinct type of gaming (called wireless gaming).

**The games and brand:** An existing PSP video game and advergame represented the two key stimuli for the current research. In order to replicate study one, a similar video game first had to be selected. A car racing video game therefore represented the first stimulus, specifically *V8 Supercars 3 Shootout*. Like *V8 Supercars 2*, which was tested in study one, this latest edition for the handheld platform is based on the real Australian motorsport series. Consequently, it also features multiple real brands (as opposed to fake placements which use fictitious brand names). The selection of this game enhanced external validity of the findings and reduced the potential for any novelty effects. The potential for confounds associated with prior exposure was also reduced, since this game was only released in March 2006 (Atari, 2006).
Selection of the second game stimulus, an advergame, was dependent on the brand selected for investigation from the *V8 Supercars* game. A content analysis of *V8 Supercars 3 Shootout* revealed a number of key brands, but the single brand selected had to satisfy a number of criteria, as applied for study one (see section 3.3.2.1, the brands). Like in the case of *V8 Supercars 2*, Ford and Holden were again identified as two prominent brands, which satisfied the necessary criteria. Ford was selected for investigation since Holden was used in the pilot study.

The selection of Ford as the focal brand was also appropriate since this brand has its own advergames. An advergame featuring product placement represented the second stimulus for the current research. Ford Motor Company has commissioned a number of these games through developer Empire Interactive (specifically Empire’s acquired firm Razorworks), including *Ford Racing Full Blown*, *Ford Street Racing* and *Ford Racing* (Razorworks, 2006; Vasconcellos, 2005). The game selected, however, had to be suitable for the PSP platform, it had to feature the Ford Falcon motor vehicle (and therefore have an Australian orientation the same as *V8 Supercars 3 Shootout*), and there had to be an absence of competing brands, consistent with the advergame definition. A Sega arcade game, *Ford Racing Full Blown* was eliminated, as was *Ford Street Racing* since it does not feature a Falcon motor vehicle. *Ford Racing* satisfied all the criteria and was therefore selected, specifically the newest Australian game in the series, *Ford Street Racing XR Edition*, released in March 2007.

The games selected for study two are comparable. Both are positive in tone and were unlikely to induce negative moods amongst respondents. This was important, as a negative mood could have decreased the likelihood of placements being adequately processed and of central processing (Aylesworth and MacKenzie, 1998). Mood affects information processing quantity, cognitive responses and attitudes, with negative mood states (as opposed to positive moods) producing negative effects (Axelrod, 1963; Mathur and Chattopadhyay, 1991). Television programs which are happier in tone have been shown to produce happier moods, more positive cognitive responses, and greater perceived advertisement effectiveness among viewers (Goldberg and Gorn, 1987). Such effects may be accentuated in a game context.
since placements are embedded within the content, as opposed to an ad which accompanies a program.

The games selected also adhere to the conventions of typical racing games. Both games are visually appealing, presenting detailed and attractive environments. It must be recognised, however, that *Ford Street Racing XR Edition* is far less sophisticated than *V8 Supercars 3 Shootout*. There are differences between the two in terms of difficulty, vehicle handling, graphics and sound. In the case of the latter, the game sounds and vehicle handling are more advanced, mimicking those of the real vehicles. *Ford Street Racing XR Edition*, on the other hand, lacks this realism. The animation is not as sophisticated and the graphics are less elaborate, with little variation in the terrain around the race circuits or the circuits themselves. Further, the game is not as challenging, nor realistic in terms of driving capabilities (for example, a player can drive into a pole and the car keeps moving). The vehicles are also more difficult to handle. Overall, *Ford Street Racing* is not as life-like and therefore probably less immersive. These differences however are unlikely to have adversely affected the results of the study. Respondents were not hard core gamers (Williams, 2002), each experimental group was exposed to only one independent variable, and exposure time was limited (discussed in the following section). Further, the differences are characteristic of advergames, which by nature tend to be less complex.

One distinction, which makes *Ford Street Racing XR Edition* more simplistic than *V8 Supercars 3 Shootout*, relates to the number of stimuli present. The *V8 Supercars* game presents numerous stimuli (see Figure 4.1). A number of brands from many different product categories are incorporated into the game, unlike in the case of *Ford Street Racing XR Edition* where only the Ford brand and products are shown (see Figure 4.2). This represents the distinction between ‘video game’ and ‘advergame’. An advergame is a brand-centred environment, so usually there are fewer placements for just one brand. This was an important difference that had to be maintained in the experiment in order to test for attitudinal effects.
While the two games differ in terms of the number of placements, they share similarities with regards to the types of placements. Recall that the pilot study tested two key types (use simulated product placements and visual brand placements), finding no effects on attitude to the brand or corporate image. These were not independently tested again in the main study, however, it was necessary for both the video game and advergame to feature placements along these dimensions.

Firstly, in *V8 Supercars 3 Shootout* and *Ford Street Racing XR Edition*, Ford appears as a use simulated placement. The differentiating feature of this type is that the product can be explicitly used. For example, a Ford Falcon can be driven in the games by a game character, under the direction of a player. In *V8 Supercars*, high-
profile race drivers are featured as the actors. The use simulated Ford placements in both games also have a strong, positive association with the game play. They are plot connected, because their use is integral to the game story, particularly in the advergame where no other brands appear. Plot connected placements may exist on a continuum from strong to weak integration. In some instances, the integration may be so strong that the placement drives the game plot, and the brand forms its storyline. In the most extreme case of an exclusive placement, a product may represent the script, making it a vital story element (Balasubramanian, Karrh and Patwardhan, 2006). Take for example the case of a Ford vehicle, which is driven in a touring car championship, where the player drives the same brand track after track, progressing towards the ultimate finale.

The two games selected for investigation in the current study also feature Ford as a peripheral, visual placement. Visual placements are not central to the game play, and have weaker associations with it. They are accessories to the play, which are often incorporated to enhance realism, acting as a form of ‘reality engineering’ (Solomon and Englis, 1994b). These placements therefore differ from use simulated placements in terms of centrality (Gould and Gupta, 2006), as they appear separately from the main entertainment aspect. Background brands are not used nor explicitly mentioned and are therefore more implicit and covert than use simulated placements.

In the racing games selected for investigation, the Ford brand appears peripherally on billboards alongside the race circuits to enhance the racing experience, almost as a form of virtual sponsorship. It also appears on all of the Ford cars with varying degrees of prominence, from vehicle signage to more discrete vehicle badges.

In both games, the Ford brand and products are strongly integrated with the game content. The brand has a strong association with the games, which was important, as it was more likely to increase brand-related cognitive elaboration (Bloxham, 1998; d’Astous and Seguin, 1999) and thereby affect attitudes. This association is also positive; no placements are portrayed in a negative light and all fit well with the context of the game, genre and medium. Further, no brands are verbally mentioned in either of the two games; only the sound effects from racing are heard during game play (driving, engines revving, tyres screeching, skidding, crashing). The Ford brand is therefore only featured visually in the form of vehicle and peripheral racetrack
signage, plus it is simulated in use. In *Ford Street Racing XR Edition*, it is only Ford products which are shown and only the Ford brand which appears on the occasional track signage.

**A second brand - Compaq:** To identify any order or stimulus effects, a second brand was chosen that was not actually featured in either of the games. This allowed for the responses of the experimental groups to be compared across two brands, to test for any bias in responses caused by the sequencing of the questions, the positioning of answers, or non-exposure to the game (as in the case of the control group). A difference was expected in responses for each of the brands since only one was featured in the games. As in the case of study one, Compaq was again selected for this exercise.

**Presentation of the independent variables:** How the stimuli should be presented to the experimental groups represented the final decision concerning the formulation of the independent variables. Each stimulus, the *V8 Supercars 3 Shootout* video game and *Ford Street Racing XR Edition* advergame, was directed at a separate treatment group. Unlike in the case of study one, respondents in these groups played the game; observers were not tested. A control group was also included, but was not exposed to a stimulus. All respondents completed a survey at the location where they were recruited. In the case of the treatment groups, this was immediately following the completion of the experiment.

The field experiment was conducted in a natural environmental setting where game play normally occurs. Since a portable gaming system was used, this setting could have been almost anywhere, though two university campuses were selected. This made access to respondents drawn from the student population easier, and was consistent with study one. It also represented a realistic setting to elicit responses to the games, as students often play on campus. Respondents were recruited and subsequently played the games at different times of the day and at a variety of locations, both indoors and outdoors. Where the experiment was performed outdoors, a shady area was selected to ensure the PSP screen could be seen. Locations included study and class rooms, student sitting areas, walkways, bus stops,
outside libraries, cafes, classrooms, and so on. The experiment was conducted in the field in the presence of clutter, noise and distraction possibilities.

Two PSP systems were used during the course of the experiment, one for each game, though these were alternated. Aside from the fact that one PSP was white and the other black, the two systems were identical; the controls and screen size were the same. The volume was also set at an equal level for both systems. Verbal instructions were given concerning how to play; the accelerator, brake/ reverse, and steering buttons were shown. Respondents were allowed to play the games using either the directional buttons or analogue stick. They were asked, however, not to change any settings in the game, as experimental control over the independent variables needed to be maintained.

Under natural conditions, a player’s exposure to brands within a game often varies with each game experience, as a result of proactive decisions made by them (Nelson, Keum and Yaros, 2004). Game scenes are unlikely to remain constant, as a result of player decisions concerning brand selection and presentation. Placements in games are both customised and collaborative. In the case of the former, technology and a participant’s input can combine to tailor a message, or a firm and a participant can collaborate to design and produce a product (Balasubramanian, Karrh and Patwardhan, 2006). An example may be where a player has the opportunity to select their brand of vehicle to drive in a racing game (customised) and select its engine parts, paint colour and logos or signage (collaborative). Freedom to make these selections however was not given in this study.

A pure field experiment was not possible or appropriate for the current research. There were some elements of the stimuli and aspects of their use that had to be controlled in order to achieve internal validity. The process for exposure had to be consistent across all respondents within each group, and between each treatment group. For every stimulus, the content to which every respondent was exposed was therefore pre-determined by the researcher. In the case of the video game stimulus, this included the V8 Supercar vehicle to be driven (as well as its view on the track), driver and race circuit. Likewise in the advergame, all these elements were pre-selected to achieve consistency, control extraneous variables and ensure the Ford
brand was actually simulated in use and featured peripherally. The various game options were used to set up the car races before respondents were recruited. The games were paused prior to the clock count down for race commencement.

A Ford Falcon XR8 was selected for play in both games. This was a use simulated placement which presented visual only information. In the advergame, the vehicle appears without signage. The front and rear number plates are labelled ‘Falcon’ and the car displays the standard front and rear Ford logo badges. The signature Ford blue was selected as the paint colour. In the video game, the Ford Performance Racing team Falcon, driven by Greg Ritter, was selected for use. This vehicle is painted with the Ford logo colours of blue and white, and features only Ford-related signage, aside from a small Castrol logo on the front spoiler. The Ford Performance Vehicle logo appears on the side doors, FPV is painted on the vehicle hood, Ford Credit (an automotive finance specialist wholly owned by Ford Motor Company) is painted on the bonnet, and the words ‘Ford Service’ appear on the bottom of the rear spoiler. ‘Ford’ is also shown across the front and rear windscreen. The Ford logo itself appears on the front of the bonnet, the top of the boot, the back rear guards, the left and right sides of the rear spoiler and in the rear number plate space. Greg Ritter is not painted anywhere on the vehicle, but the driver in the game wears a blue and white jumpsuit. Ford Performance Racing sponsors a number of other cars, but they were not selected for the experiment, as these vehicles share signage with other sponsors.

The cars in each of the games were automatic (not manual) and competed in solo races (as opposed to team races where a player can switch between vehicles). In both games, the vehicle driven by the player is shown close up for several seconds at the beginning of the race. The player is therefore immediately exposed to the Ford brand. The on-screen display of the vehicles was also set so that the cars could be viewed on the circuit while racing. This aspect however was difficult to control, as the view can be changed by a player with the push of a single button. Finally, a key difference between the two games relates to the type of racing: track racing for V8 Supercars 3 Shootout versus street racing in Ford Street Racing XR Edition. Both games however display similar information on the screen during a race. Both indicate the player’s position, lap number, race time, speed in kilometres per hour,
and location on the circuit map. The *V8 Supercars* game also shows engine speed in revs, damage indicators and fuel level. These displays were maintained throughout the experiment.

A low grade, easy circuit which was similar in both games was selected for play. Day races were chosen where the tracks are well lit. The circuit selected in the advergame was a city street lined with trees, power poles and buildings. Only Los Angeles street settings are available in this game, but the track selected was comparable to an Australian setting. One billboard with the Ford logo is featured alongside the circuit. In the *V8 Superars* game, the Adelaide track circuit was selected. Marquee events such as Bathurst, Sandown and the Gold Coast Indy were inappropriate, as these events generally attract the highest television audiences and spectators (V8 Supercars, 2007). The Adelaide circuit features less signage than some of the other tracks. Only overhead track signage for Clipsal, Adelaide, Holden and Ford appears, as well as side barrier signage for Ford and Holden. Billboards for these brands are also shown alongside the track at the start of the race. While racing, both Ford and Holden competitors can be seen, with these vehicles displaying signage for various sponsors (Pirtek, Caltex, Caterpillar, Orrcon, BOC, Westpoint, Betta Electrical, LG, WPS and Fujitsu, among others). A total of 21 vehicles race at the same time. In the advergame, only Ford vehicles compete in the race (seven in total) and none feature any vehicle signage; only the manufacturer badges appear on the cars, as they do in real life.

There is an inherent difficulty associated with coding placements which appear in games, due to the nature of the medium. Games are interactive, hence the way brands and products appear is largely determined by the player. As an example, a player who possesses strong skills developed as a result of frequent game play may receive greater exposure to the vehicle brands and signage of their competitors, as they would be able to maintain pace with these opponents. They may not, however, be exposed to some peripheral placements as they drive effortlessly around the track. A novice player, on the other hand, may find themselves confronted with much track signage as they drive into barriers and walls in their attempt to conquer the race, though they may receive limited exposure to the brands of their competitors. In the current study, this could not be controlled. The various sizes and location of the
Ford billboards in the games meant they were highly visible and in areas where all players would pass. Most placements should have therefore been easy to see, but exposure time was dependent on the skill level of the player.

The length of time for exposure to the actual game stimuli was controlled. Although this would not naturally occur, and would be dictated by an individual’s level of interest and skill for example, it was necessary for reasons of practicality, to achieve consistency across the groups, and to work within budgetary and time constraints. The intention of this study was to test whether attitudes and image are affected after just one exposure to a stimulus. Accordingly, this was a cross-sectional design, so subjects were assigned to one group with only one post-test measurement taken. This does however pose limitations for the study, as presented later in Chapter 5.

Respondents in the video game and advergame treatment groups were required to play their respective game for a total of five minutes. Although this may seem short, the timeframe was deemed appropriate for a number of reasons. First, players spend on average five to seven minutes with an advergame (Fattah and Paul, 2002), plus the time for handheld game play tends to be less than that spent with television console games. Also, it is hard core gamers who often spend longer with games (Chaney, Lin and Chaney, 2004), which the current respondents were not. Further, other studies have shown that a single exposure to a promotion can influence consumers, in particular brand attitudes (see, for example, Gibson, 1996). Repeat exposure results in attitudes that are more accessible from memory and held with greater confidence (Berger and Mitchell, 1989), but the current study sought to test for attitudinal influence, not the strength of those attitudes. Earlier investigations of placements in games have also used only short exposure times. Mallinckrodt and Mizerski (2007) allowed around five minutes for game play in their study, while Nelson, Yaros and Keum (2006) provided only three minutes. This may arise because the nature of the game environment allows for continuous exposure. In other words, even within a short period of playing time, multiple exposures to placements can be achieved. Finally, the allocated time for the current experiment was deemed appropriate to reduce the risk of fatigue.
The five minutes for game play was strictly adhered to. A stopwatch was used to monitor time, away from view of the respondents. Subjects were allowed to restart the game if their vehicle was damaged and unable to continue, or if they completed the race. This process was repeated as many times as necessary for the five minutes of game time to be achieved. The additional time necessary for the game to load was factored in. Questions were incorporated into the survey instrument to gauge skill level in relation to the game and the medium in general, thereby removing several confounds which may have existed. Skill level was self-reported.

While some aspects of the experiment had to be controlled, largely respondents were given the freedom to play a game as they normally would. In fact they were instructed to do so. This was the only direction given as part of the stimulus presentation, aside from information concerning how to play. Respondents were allowed to sit or stand, and use the controller as they deemed appropriate. Instructions were given only for basic functions in the game for ease of use, but more experienced gamers may have used other controls as well (such as the handbrake or rear view mirror, for example). The researcher remained present during the experiment, but allowed respondents to construct their own game playing experience. Where they participated in the presence of others, these friends were allowed to view the game play and speak to the respondents. The players too were allowed to communicate with them if they wished. This represented an extraneous variable that could not be controlled and nor was this the intention. The purpose was to perform the experiment according to the natural conditions by which game play occurs, so that the opportunity for placement processing was the same as that afforded in a real game playing session. This was also necessary so that observations of real game playing behaviour could be recorded.

A second aim of the main study was to gather observations of what occurs when people play games. Therefore, while respondents played, the researcher took notes of physical behaviour and verbal comments, as well as details of the physical conditions and events surrounding exposure. This included watching the actions of others present at the time and examining their involvement in shaping the game playing experience. A disguised observation method was used, whereby this activity occurred out of view of the respondents so as not to introduce bias (Hair, Bush and
Ortinau, 2000). Although they were not aware of the observation process at the time, permission was obtained to use these observations following the experiment.

### 4.3.2.2 Dependent Variables

The constructs of brand attitude and corporate image were operationalised using the same scales as in study one. These pre-existing scales reported strong reliability levels in the first investigation and were deemed appropriate for measuring the dependent variables in study two, without change. The scales were again combined to create overall measures for the constructs. The reliability levels for the scales were acceptable, since all achieved a Cronbach’s alpha coefficient of greater than .70, as advocated in the literature (see, for example, Burns and Bush, 2000; Nunnally, 1978). These ranged between .76 and .90, as shown at Table 4.1.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford Brand Attitude</td>
<td>.85</td>
</tr>
<tr>
<td>Ford Corporate Image</td>
<td>.76</td>
</tr>
<tr>
<td>Compaq Brand Attitude</td>
<td>.90</td>
</tr>
<tr>
<td>Compaq Corporate Image</td>
<td>.85</td>
</tr>
</tbody>
</table>

Source: Current study; n=350

Seven-point Likert-type scales were used, which measured level of agreement with a series of statements anchored by the descriptors strongly disagree and strongly agree. The scales were replicated for the two brands under investigation: Ford and Compaq (see Appendix 4). The statements were modified for each of the brands as necessary. Additional questions were included to measure the covariates (discussed in the following section).

The dependent variable of brand attitude was again measured using the Brand Quality instrument, reported by Keller and Aaker (1992). This was changed from a 3-item semantic differential scale anchored by descriptives and their negatives, to a Likert-type scale with strongly disagree and strongly agree as anchors. Keller and Aaker (1992) reported a reliability in excess of .70. For the brands examined in the current study, reliability levels were at .85 or above, similar to those achieved in the pilot (reported in Table 3.1). The subjects’ image of the brand manufacturer was assessed using the Corporate Image scale originally presented by Javalgi et al.
(1994) and modified by Pope and Voges (1999). This 5-item scale achieved a Cronbach’s alpha of .76 in Pope and Voges’ (1999) study and between .72 and .95 for each of the brands in study one. Reliability levels were above .76 in the current study. Changes in brand attitude and corporate image were measured by taking the difference between the measures for each of the three experimental groups (video game player, advergame player, and control).

Attitude toward the Ford brand was operationalised using the 3-item, 7-point Likert-type scale with the anchors of strongly disagree and strongly agree for response to the statements:

- the Ford car is of high quality
- I would be very likely to try a Ford car, and
- the Ford car is a superior product.

The current study achieved a Cronbach’s alpha of .85.

Ford corporate image was measured using the 5-item, 7-point Likert-type scale, which required respondents to indicate their level of agreement with the statements:

- the Ford car company has good products
- the Ford car company is well managed
- the Ford car company is involved in the community
- the Ford car company responds to consumer needs, and
- the Ford car company is a good company to work for.

The scale achieved a Cronbach’s alpha of .76.

The same 3-item and 5-item Likert-type scales were employed for Compaq, but with minor variations to the statements. To measure brand attitude, respondents were asked to indicate their level of agreement with the statements:

- the Compaq product is of high quality
- I would be very likely to try a Compaq product, and
- the Compaq machine is a superior product.

Also, to measure image:

- Compaq has good products
- Compaq is well managed
- Compaq is involved in the community
- Compaq responds to consumer needs, and
- Compaq is a good company to work for.

In the current study, these scales achieved Cronbach’s alphas of .90 and .85 respectively.

### 4.3.2.3 Covariates

In examining the relationship between game placements (video game and advergame product placement) and attitudes (toward the brand and its manufacturer), it was necessary to exclude any interference in the main effects, which could potentially occur through covariates. Several covariates were identified as potential confounds to the relationship between the independent and dependent variables in this study (discussed at section 3.5.5). These included involvement, skill level in the game, skill level in relation to the medium and interactivity. It was necessary to control these variables and remove their effects.

First, as in the case of study one, the construct of involvement was operationalised with regards to level of car involvement. This was treated separately to interactivity, as it was thought that either interactivity of the medium or one’s involvement with the product itself may affect the amount of attention given to placements in a game. Other researchers have identified that an individual’s level of involvement may mask effects otherwise attributable to progressive levels of interactivity and have therefore treated these as separate constructs (see, for example, Coyle and Thorson, 2001; Fiske and Taylor, 1991). In the video game product placement domain, it has also been shown these two constructs have different effects. Nelson (2002), for example, found that brand usage in a game (game involvement facilitated by interactivity) was important for recall superiority and led to increased short-term recall of placed brands. Brand relevance (product involvement), on the other hand, was particularly important for long-term recall. In this study, both involvement and interactivity were therefore identified as covariates that could potentially affect the relationship between game placements and attitudes.

The construct of involvement was measured using the Srinivasan and Ratchford (1991) Product Involvement scale. This is a 6-item Likert-type measurement asking respondents to describe themselves as having an interest in, being fascinated by,
having a compulsive need to know about, or being crazy about cars. Two items ask about liking auto races and liking to engage in conversation about cars. Srinivasan and Ratchford (1991) report an alpha of .86, while study one reported .95. The current research study again applied a 6-item, 7-point Likert-type scale anchored by the descriptors strongly disagree and strongly agree. The statements read:

- I have an interest in cars
- I am fascinated by cars
- I have a compulsive need to know about cars
- I am crazy about cars
- I like car races, and
- I like to talk about cars.

The scale achieved a Cronbach’s alpha of .94 (shown at Table 4.2).

Interactivity was operationalised with regards to level of perceived interactivity in the game. Other authors have argued that the effects of interactivity are more appropriately understood when this is treated as a perceptual variable that takes into consideration the perspective of the user and what they perceive as interactive (see, for example, McMillan and Hwang, 2002; McMillan, Hwang and Lee, 2003; Newhagen, Cordes and Levy, 1995; Wu, 1999). Accordingly, Johnson, Bruner and Kumar’s (2006) Perceived Interactivity scale was used. This is a multi-dimensional scale, which treats interactivity as a perceptual level construct, quite distinct from its behavioural consequences. This is consistent with the earlier discussion of interactivity as a game characteristic, which generates user responses (see section 2.6.2). Further, the current study sought to test the influence of interactivity on the relationship between game placements and attitudes, so it was necessary to employ a scale that did not include any attitudinal or behavioural intention items stemming from interactivity itself (as is the case with many scales available in the literature, see, for example, Cho and Leckenby, 1999; Wu, 1999). Finally, since most conceptualisations of interactivity are tied to technology (see, for example, Coyle and Thorson, 2001; Liu and Shrum, 2002), available scales tend to be internet-specific (see, for example, Liu, 2003). Johnson, Bruner and Kumar (2006), however, developed their scale to apply to a variety of interactive situations, both mediated and non-mediated. Although they claim the scale can be applied to any
environment, it remains untested in a game context. This offered an additional contribution for the current study.

The Perceived Interactivity scale (Johnson, Bruner and Kumar, 2006) is a 17-item measurement employing 7-point rating scales. It uses use the anchors of very low and very high for response to a series of questions that refer to four facets of interactivity: reciprocity, responsiveness, nonverbal information and speed of response. Four items make up each of these facets, aside from responsiveness which has five items. To achieve consistency, the current research study employed a 7-point Likert-type version of the scale anchored by the descriptors strongly disagree and strongly agree. The items used by Johnson, Bruner and Kumar (2006) were modified so that statements were included which referred to a game, not a website as in the original scale (shown at Appendix 5). These questions were not included in the survey instrument for the control group (n=150), as these subjects were not exposed to a game stimulus.

To measure reciprocity, game players were asked to indicate their level of agreement with the statements:

- every time I clicked on something the game responded
- the game required me to perform a high number of actions
- I participated in the interaction with the game to a large extent, and
- I feel that the number of times the game responded to my commands was high.

For responsiveness, respondents were asked what occurred when they clicked on things in the game, and how strongly they agreed that:

- the information shown was relevant
- the information shown was appropriate
- the information received was expected
- the information received was suitable for the task at hand, and
- the information received was useful.
With regards to nonverbal information, the statements read:
- pictures, icons, graphics, animation and colours were used in the game to a large extent
- the game contained a lot of non-text information (i.e. pictures rather than words and numbers)
- the game contained more graphics-type information (pictures, colours, animation etc.) than text-type information (words and numbers), and
- pictures and graphics were used to enhance my understanding of the brands in the game.

Finally, for speed of response, the statements were:
- the game responded quickly to my commands
- every time I clicked on something in the game, the game responded quickly
- when I performed an action in the game, there was a delay in obtaining a response, and
- my impression is that the game responded immediately to my actions.

The third item for speed of response was reverse scored.

Johnson, Bruner and Kumar (2006) report a Cronbach’s alpha of .77 for reciprocity, .91 for responsiveness, .86 for nonverbal information, and .96 for speed of response. The current study achieved alphas above the .70 requirement for almost all scales, except in the case of reciprocity with an alpha at .70. These are reflected in Table 4.2. The 17-item scale achieved an overall alpha of .82.

<table>
<thead>
<tr>
<th>Table 4.2 Item Reliabilities for Covariates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scale</strong></td>
</tr>
<tr>
<td>Car Product Involvement</td>
</tr>
<tr>
<td>Reciprocity (Interactivity Facet 1)</td>
</tr>
<tr>
<td>Responsiveness (Interactivity Facet 2)</td>
</tr>
<tr>
<td>Nonverbal Information (Interactivity Facet 3)</td>
</tr>
<tr>
<td>Speed of Response (Interactivity Facet 4)</td>
</tr>
<tr>
<td>Perceived Interactivity</td>
</tr>
</tbody>
</table>

Source: Current study; Car Product Involvement n=350, Interactivity n=200
The alphas recorded for reciprocity and nonverbal information were relatively low at .70 and .71 respectively. A further reliability analysis was therefore performed on these two factors. For reciprocity, removing item two, the game required a high number of actions, increased the alpha to .77. It had very little impact however on the alpha for the overall interactivity scale, which increased to only .83. This item was therefore maintained in further analyses. Removing any items for non-verbal information reduced the alpha below the .71 level already achieved, therefore all four items were maintained.

The four facets were verified using a factor analysis. A VARIMAX normalised factor rotation was used, since it is a superior and popular orthogonal factor rotation method (Hair et al., 2006). The key advantage of this method is the ability to achieve a simplified factor structure (Hair et al., 2006). It indicated that four factors do exist, but not with exactly the same items Johnson, Bruner and Kumar (2006) suggest. A scree test indicated that there were only two strong factors above the elbow, as shown at Figure 4.3.

**Figure 4.3 Scree Plot for Perceived Interactivity Factors**

![Scree Plot](source: Current study; n=200)

The two facets of responsiveness and speed of response were found to have the highest loading. The factor loadings were above the recommended .50 for practical significance (Hair et al., 2006). In fact, in many instances they exceeded .70, which
is suggested to be ideal (see, for example, Hair et al., 2006). These are reflected in Table 4.3. Factor 1, responsiveness, consists of five items. Factor 2, speed of response, consists of four items. A further two items for each of the other factors were high. For the reciprocity facet of interactivity, two items - the game required me to perform a high number of actions, and I participated in the interaction with the game to a large extent - achieved factor loadings of .90 and .64 respectively. Also, for nonverbal information, two items - the game contained a lot of non-text information, and the game contained more graphics-type information than text-type information - achieved factor loadings of .78 and .86. All factors were maintained in further analyses, so as to be able to confirm the complete scale and recommend changes.

Table 4.3 Significant Factor Loadings for Interactivity: Responsiveness and Speed of Response

<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsiveness 1: When I clicked on things in the game the information shown was relevant</td>
<td>.79</td>
</tr>
<tr>
<td>Responsiveness 2: When I clicked on things in the game the information shown was appropriate</td>
<td>.79</td>
</tr>
<tr>
<td>Responsiveness 3: When I clicked on things in the game the information I received was what I expected</td>
<td>.77</td>
</tr>
<tr>
<td>Responsiveness 4: When I clicked on things in the game the information I received was suitable for the task at hand</td>
<td>.80</td>
</tr>
<tr>
<td>Responsiveness 5: When I clicked on things in the game the information I received was useful</td>
<td>.79</td>
</tr>
<tr>
<td>Speed of response 1: The game responded quickly to my commands</td>
<td>.65</td>
</tr>
<tr>
<td>Speed of response 2: Every time I clicked on something in the game, the game responded quickly</td>
<td>.64</td>
</tr>
<tr>
<td>Speed of response 3: When I performed an action in the game, there was a delay in obtaining a response (reverse scored)</td>
<td>.79</td>
</tr>
<tr>
<td>Speed of response 4: My impression is that the game responded immediately to my actions</td>
<td>.60</td>
</tr>
</tbody>
</table>

Source: Current study; n=200
Johnson, Bruner and Kumar (2006) also include a second order construct for perceived interactivity. The additional item questions level of agreement with the statement ‘the web site was interactive’. In their study, the four facets explained 67.7% of the variance in this construct. The question itself however is weak, since it is open to interpretation. Interactivity is a complex construct, which is unlikely to be captured by this one statement, but it was included for the current study so that its usefulness could be examined. Players were therefore asked to indicate the overall level of interactivity of the game, by indicating the extent to which they agreed or disagreed with the statement ‘the game was interactive’ (on a 7-point scale). Reciprocity, responsiveness, nonverbal information and speed of response explained 31% of the variance in the perceived interactivity construct for this research. Only a moderate relationship was detected (Beta=.55).

The final covariates in the current study related to skill. Participants who played a game were asked to rate their skill level, but unlike in study one, two separate questions were posed to gauge skill level with regards to the game specifically and medium generally. Responses to these questions indicated a player’s level of experience with not only the specific vehicle, but also the game medium. It was felt that testing these separately could yield different results. Skill level in the game (or driving skill) was measured using a single-item, 7-point Likert-type scale. Consistent with study one, players were asked to indicate their level of agreement with the statement, ‘In this race I drove well’, where 1 was strongly disagree and 7 strong agree. The mean score for video game players was 2.27 (n=100) and for advergame players 3.39 (n=100). The overall mean achieved for skill level was 2.83 (n=200). This is almost the same as the mean for skill reported by players and observers in study one (M=2.88, n=40).

A similar item was employed to measure skill level in relation to the medium (game skill), but respondents indicated their level of agreement with a modified statement which read ‘I am a highly experienced game player generally’. The mean score for video game and advergame players was 3.81 (n=100) and 3.58 (n=100) respectively. The overall mean was 3.69 (n=200). Neither of the two questions concerning skill was included in the survey instrument for the control group (n=150).
4.3.3 Sample

A random sample of university students was selected for the current study, from the student population on two campuses of an Australian east coast university. This selection presents limitations for the study pertaining to generalisability (discussed in further detail at section 5.6), but it satisfied a number of requirements in light of the experimental design and research question.

An experimental design, such as that being used in the current study, requires a homogeneous sample that can be divided into subgroups (Babbie, 2004; Punch, 2005). This increases the likelihood the experimental treatment will affect all participants in the same way, and hence causality can be assigned to the treatment. Selecting sample elements from the student population meant this condition could be satisfied. In particular, student subjects were likely to share similarities with regards to level of education and intelligence, two key factors that affect information processing ability (Anderson and Jolson, 1980). They were expected to differ however with regards to gender, age, game playing habits, proficiency in playing and brand/ product involvement. The purpose of the research was to understand the influence of placements in games on the general adult population, so it was unnecessary to include subjects who shared similarities along these dimensions. Questions pertaining to these factors were included in the survey instrument to test whether placements might influence subsets of players. Further, these differences reflect the true, diverse demographics of gamers and are consistent with the characteristics of motorsport fans generally.

The selection of a student sample for study two was consistent with the pilot study. Other members of the university community were included in the earlier investigation, but were excluded from the current study in order to achieve greater homogeneity within the sample. The selection also satisfied budget considerations, the need for experimental control and guaranteed access to a sufficient number of participants. Although the use of student samples is often criticised in the literature (see, for example, Wells, 1993), weaknesses associated with such a selection were less significant in the context of the current investigation. It is easier to generalise results to a larger population when explanatory research is performed (Babbie, 2004), plus university students are representative of the larger population of gamers.
They share the same demographic characteristics and represent a key gaming segment; students are, in fact, a key target market for game hardware and software (Ip and Jacobs, 2005; Snider, 2003b). The sampling method employed also reduced the risk of errors and increased external validity.

As in the case of study one, respondents in the current study were not self-selected. A simple random sampling procedure using a mall-intercept technique was again employed to draw subjects from the student population. Subjects were drawn at random, whereby every tenth student passing a given point was approached for participation, until the desired sample size was reached. This procedure was carried out across different locations on two university campuses, at different times of the day and week. Potential participants were screened by being asked if they were students. Upon selection, respondents were randomly assigned to one of the treatment or control groups. In instances where a group of students was approached and agreed to participate, a random split sampling technique was employed to allocate subjects to the treatment of video game/advergame, or control. These steps reduced the risk of selection bias and sampling errors. The risk of non-response error was reduced due to the nature of the research topic and the requirement that many subjects play a game (an enjoyable activity that was expected to encourage participation).

The guidelines offered by Roscoe (1975) and Sekaran (2003) were used to determine an appropriate sample size. Consideration was also given to the data analysis techniques required for testing the relationships between the variables under investigation, as some statistical techniques require minimum sample sizes in order to be reliable (Barlet, Kotrlik and Higgins, 2001). A sample size of 100 respondents per treatment group and 150 for the control was deemed appropriate for the current study. This equates to a total sample size of 350, much larger than that for the pilot study and any other video game product placement investigation performed to date (see section 2.6.1). A larger sample size was necessary for a number of reasons.

First, a field experiment was conducted, which was less tightly controlled than in study one, thereby necessitating a larger sample (Burns and Bush, 2003). Second, including a greater number of elements also decreased the potential for random
sampling error, which can be particularly problematic when using simple random sampling (Zikmund and Babin, 2007). Third, the sample size selected was more than ten times larger than the number of variables being investigated, as advocated in the literature (see, for example, Roscoe, 1975; Sekaran, 2003). It also satisfied the guidelines for a factor analysis, which was necessary to examine the structure of the interrelationships among the variables in Johnson, Bruner and Kumar’s (2006) scale for the interactivity covariate (discussed at section 4.3.2.3). A sample size of 100 or larger is recommended for such an analysis, but ideally ten times as many observations as the number of variables is preferred (Hair et al., 2006). This equates to a sample size of 170 for the treatment groups in the current study, a number exceeded with the selection of 200 subjects. The overall sample size and difference in group sizes also met the requirements for the data analysis methods selected, analysis of variance and analysis of covariance. Further details of the data analysis methods and sample are presented at sections 4.3.8.1 and 4.4.1.1 respectively.

4.3.4 Survey Instrument

The survey instrument used for the main study was similar to that for study one. It was again structured in two parts and was a maximum of three pages in length. The length and questions varied slightly, however, since the variables being studied were different. Unlike in the case of study one where three brands were tested, the current investigation tested only two, plus skill level in relation to the game medium and interactivity were included as covariates. The question pertaining to brand recall was removed, since the ability of gamers to recall placed brands was confirmed in the pilot investigation.

Three surveys were developed for this research: video game, advergame and control. These appear at Appendix 4. The surveys were nearly identical, though additional questions were incorporated for the experimental groups. Video game and advergame players were asked to provide feedback concerning their skill level in relation to the game to which they were exposed, their skill level in relation to the game medium, and the interactivity of the game. These questions were probably more difficult to answer and were therefore featured later in the survey, before the demographic questions pertaining to age and gender. One of the interactivity-related items also asked about the brands in the game and therefore needed to be included
towards the end. These questions were removed for the control group since they were not exposed to a stimulus. All respondents were asked to answer questions about each of the brands, Ford and Compaq, as well as their level of involvement with cars.

The reliability of the instrument was enhanced through the use of pre-existing scales, which were tested as part of study one. The scale for interactivity represented the only exception. Respondents were asked to indicate their opinion concerning a number of statements, all formatted the same for ease of completion. All questions were closed and used 7-point scales. The layout and question order was maintained for each version of the survey. To reduce the potential for contamination of the results and respondent error, the researcher remained present during the experiment and survey completion. This ensured that the questions in the survey were completed in order, that respondents did not discuss the nature of the research with others present, that the process for exposure to the stimuli was consistent, and that any clarification with regards to the questions or process could be provided if required. This was particularly important since a self-administered questionnaire was used, as it reduced the risk of incomplete and incorrect responses (Burns and Bush, 2000).

Instructions for this research were kept to a minimum, so as not to introduce response bias. The simplicity of the survey meant that minimal question-answering instructions were necessary in the instrument itself, but some directions had to be given to facilitate the experiment. Similar to study one, respondents were recruited by being informed that the researcher was conducting a study about video games. They were advised that their participation would involve playing a game and/or answering a questionnaire, but it was not revealed which games, nor that the true purpose of the study was to investigate the effects of product placement. Information concerning aspects of the study was supplied in a written cover letter, in accordance with the ethics protocol obtained (discussed at section 4.3.6). This included details of the Doctor of Philosophy program, name of the researcher, expected time for participation, activities involved, data use and storage, ethics clearance and provision of findings. Details of the competition to win a $100 gift voucher from home entertainment retailer JB Hi-Fi were also provided. The
incentive was offered to thank respondents for their time and to reduce the potential for refusals (and therefore nonresponse error) (Burns and Bush, 2000).

Upon receipt of an acceptance, subjects were randomly assigned to either the video game or advergame treatment group, or the control group. In some instances a single subject was recruited, in others a group of students participated. Game players were advised that they had to play their respective game for five minutes, and then complete and submit a questionnaire administered by the researcher immediately following. Those in the control group only completed the survey (the process for survey administration is discussed at section 4.3.5). The handheld PSP systems were given to respondents in the treatment groups, with the games paused at the start of the car race. Instructions were communicated concerning how to play, whereby the accelerator, brake and directional buttons were shown. Respondents were asked to play the game as they normally would; they were therefore allowed to talk with friends who were present, to sit or stand while playing, to wear sunglasses, and so on. No instructions were given in this regard. The only condition was that players did not change any of the game settings, such as the track or vehicle. They were asked to continue playing the same track, even if the game had to be restarted as a result of a serious crash or race completion. Unlike in the case of study one, respondents did not watch a race replay, as this option was not available in the stimulus for the second treatment group, the advergame.

As in study one, a pre-test was conducted with a small group of respondents. The motivation for this pre-test was to verify the methodological procedure. Since pre-existing scales were used in the survey and the pilot study had been conducted, it was unnecessary to perform extensive pre-testing. Furthermore, no issues were uncovered with the small group that was tested. These results were later excluded as part of the analysis.

4.3.5 Survey Administration
The survey instrument was administered to all respondents in the field, where they were recruited. In the case of the game players, this was following exposure to either the video game or advergame stimulus. The PSP systems were taken from these subjects before distribution of the survey. Respondents were provided the
questionnaire on a clipboard along with a pen, and reminded to indicate their opinion on each of the statements (they did not necessarily know the answers to the questions, but were asked their perceptions at a single point in time). Upon receipt, respondents were asked not to communicate with anyone, and where more than one person had participated, they were separated to ensure compliance. The survey was completed immediately in-person and submitted to the researcher. Following completion, a written cover letter as well as the terms and entry slip for the competition were provided (available at Appendix 4d and 4e respectively). Respondents were debriefed at this time and advised of the true purpose of the research. Game players were also informed that observations had been recorded during the experiment, and permission was sought for their use.

Three hundred and fifty surveys were distributed for the study: 100 for each of the treatment groups for a total of 200, and 150 for the control group. No respondent was approached more than once. The average time for completion of the video game and advergame surveys was 4 minutes 30 seconds, and 4 minutes 40 seconds respectively. This was acceptable since the two surveys were identical. The time for stimulus exposure was also the same for both groups, at five minutes. The control group did not receive a treatment but completed a survey, which was around half the length of that for the experimental groups. The average time for completion of this questionnaire was approximately two minutes.

4.3.6 Ethical Considerations
An application for ethical clearance for the main study was submitted and approved by the Secretary of the Griffith University Human Research Ethics Committee. A request for a variation to this protocol was also granted, whereby an extension of time was awarded. The permissions are presented at Appendix 6. The research was conducted in accordance with the ethics protocol obtained and the guidelines of the Ethics Committee.

4.3.7 Validity of the Experiment
The main study employed a field experiment to test the effects of product placement in games. Unlike the pilot, which employed a laboratory experiment, the main study was conducted under real conditions in a natural setting. The primary reason for this
selection was to address the limitations pertaining to external validity of the earlier investigation.

Laboratory experiments tend to suffer from a lack of external validity, because they are performed under artificial conditions in contrived settings. The greatest advantage of naturalistic field experiments, however, is that they overcome this limitation. They offer the ability to generalise results beyond the experimental subjects and situation, and draw conclusions that observed relationships will hold true in a real world context (Zikmund and Babin, 2007). Their major limitation, however, is a lack of internal validity. Unlike in a laboratory, where the researcher is able to control a range of extraneous variables which may threaten to contaminate the results, all extraneous factors cannot be controlled in the field. It can therefore be difficult to draw valid conclusions, as there is a risk the observed results may have occurred due to some other force and not the experimental manipulation (Zikmund and Babin, 2007).

It was critical in the current study to maximise internal validity. In developing the stimuli, sampling plan and timing for the experiment, steps were therefore taken to reduce potential risks. For example, the game console, games, car race and brands selected for the stimuli were surrounded by minimal promotional activity at the time of the experiment. This reduced the risk of history effects. It was important that subjects were not sensitised to the presence of product placement, so the hypotheses were hidden from them and only two brands were studied to control for demand artifacts. The maturation of subjects did not present a threat, nor did mortality, as the study occurred at a single moment. Subjects were exposed to one treatment and then completed the survey; a pre-test was not included. Further, respondents in the treatment groups received the same manipulations and the survey instrument for all groups was almost identical. Selection bias was limited through random allocation to the groups, plus the homogeneity of the sample minimised the threat of statistical issues. Finally, the threat of instrumentation effects was removed by maintaining the same measurement processes and instrument throughout the course of the experiment. One researcher performed all of the field work and remained present during the experiment, thereby reducing the risk of both field worker and respondent error (Burns and Bush, 2003).
As a result of the classical experimental design adopted in this study, most of the threats to internal validity were minimised. This meant however that several extraneous variables had to be controlled, which would not naturally occur. As an example, the racetrack and vehicle selected for use in a game would normally be at the discretion of the player, as would the length of time for game play. In this instance, such decisions were necessary on the part of the researcher in order to achieve internal validity. The control exercised poses limitations for the results to be generalised beyond student gamers and to other environments, such as in the home (discussed in Chapter 5). Nevertheless, the adoption of a field experiment allowed for the interaction of real-world variables to be taken into account, the most significant of which was the influence of noise. Respondents were exposed to a stimulus in the presence of others, in a realistic setting where game play usually takes place. These respondents were general game players who were given great scope to play a game as they normally would. This reduced the potential for them to respond in an abnormal manner.

When conducting an experiment, a researcher often has to make trade-offs between internal and external validity. The advantage of this research, however, is that both were achieved. The main study represented somewhat of a replication of the pilot, with the key difference being the type of experiment executed, and subsequently the types and levels of validity attained. Further, employing triangulation, specifically through the use of observation as a second method of data collection, enhances the reliability of the findings. The results therefore provide strong evidence concerning the true influence of placements in games.

4.3.8 Data Analysis
The main study sought to examine the effects on consumers of brand and product placements in games. Specifically, it sought to identify the relationship between product placement in games (in both a video game and advergame), and brand attitude and corporate image. The objective was to identify the differences with regards to these two dependent variables between respondents who played a video game, those who played an advergame and subjects not exposed to a game. Four additional elements were allowed for as covariates: product involvement, skill level in the game, skill level in relation to the medium and interactivity. To examine these
relationships, appropriate data analysis techniques had to be selected. This section provides details of these techniques and justification for their selection. The procedures for data verification are outlined at section 4.3.9.

4.3.8.1 Justification of Analysis Techniques
Analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were identified as the most appropriate statistical techniques for analysing the data collected in the main study. These are the same techniques that were employed for the pilot. Their selection was again appropriate for several reasons.

First, these techniques allowed for the detection of any difference in brand attitude and corporate image between the groups examined: those exposed to a stimulus and those not exposed, and those exposed to each stimulus, video game and advergame. ANOVA also allowed for independent analysis of the dependent variables. This was necessary as both brand attitude and corporate image were treated as separate constructs. Further, the two focal brands (Ford and Compaq) had to be analysed separately, as only one was actually featured in the game stimuli. ANCOVA was employed as well, in order to control for the effects of involvement, skill level and interactivity on the dependent variables. Finally, both techniques allow for differences in group size (Hair et al., 2006), which was important considering the treatment of missing values, as discussed next.

4.3.9 Data Verification
Quantitative data collected for the main study were entered into SPSS for Windows, version 14.0. One item in the survey was reverse scored (item 3 for the interactivity/speed of response variable, which read ‘when I performed an action in the game, there was a delay in obtaining a response’). This was done so that a negative rating on the scale would count as a positive rating for the variable, consistent with the other items. Prior to executing the statistical tests, the data were screened and their characteristics examined. No evidence of inconsistencies, errors, sabotage, or outliers was detected. In one case an out-of-range value was identified, which had resulted from an error in data entry. This was subsequently corrected by referring back to the original survey. Finally, no order or stimulus effects were evident.
Compaq was included as a placebo to test for these effects, but since none were found, the brand was removed from all further analyses.

Missing values were detected in 25 cases. This represented around 7% of the sample. A Missing Value Analysis in SPSS and manual identification revealed no set pattern in the missing values. A total of six cases, however, were missing between 21% and 41% of the data, mainly for questions pertaining to the dependent variables. These cases were therefore eliminated prior to further analysis. This reduced the group sizes to 99 for both the video game and advergame treatment groups, and 146 for the control group. This equates to a total sample size of 344, 98% of the original sample. Of the remaining 19 cases, missing data ranged from one to three items. Only one case had missing data for three items, while seven cases had missing values for two items. Of the 44 variables, 15 had missing values ranging from one to five cases (only age had five cases missing). Given the relatively low level of missing data, mean substitution was used to replace missing values, as advocated in the literature (Hair et al., 2006).

Once the data were screened, descriptive statistics were performed to determine the sample characteristics, and to ensure compliance with the assumptions of the ANOVA and ANCOVA test procedures. The hypotheses were then tested. Following this, the observations recorded via handwritten notes were transcribed into a word-processing file and conclusions were drawn by identifying common themes across the respondents. The results of the hypothesis testing are presented next. Observations are presented in section 4.5 and are used to help explain the findings. A summary of the observational data is presented at Appendix 7.

4.4 Findings
Section 4.3 outlined the research method for the main study. This section presents details of the data analysis, commencing with an overview of the sample demographics. Details of the ANOVA and ANCOVA techniques employed for testing the hypotheses are then provided, before presenting the results of these tests. The findings are discussed at section 4.5.
4.4.1 Basic Data Analysis

Before testing the hypotheses, basic data analysis was conducted. This was necessary to ascertain the characteristics of the sample, and to ensure compliance with the assumptions of the ANOVA and ANCOVA techniques.

4.4.1.1 Sample Description

The original sample size for this research was 350, with 100 respondents in each of the treatment groups (video game, advergame) and 150 in the control group. As discussed in section 4.3.9, six cases were deleted as a result of missing values, reducing the sample size to 344. The group sizes were reduced to 99 for the video game group, 99 for the advergame group and 146 for the control group.

To ascertain the demographic characteristics of the sample, descriptive statistics were performed on the data. The results of this analysis are presented at Table 4.4. The control and experimental groups did not significantly differ from each other with respect to age or gender. The mean age for the sample is approximately 22 years. This is representative of gamers, where the most frequent players are aged between 18 and 35 years (ESA, 2004d). The gender distribution is also comparable across the groups. The treatment groups were approximately 60% male, though in the control group there is an almost equal number of males and females. The mix of males and females in the sample addresses a weakness of many prior investigations, which have tended to sample one gender (see section 2.6.1).

Table 4.4 Sample Demographics

<table>
<thead>
<tr>
<th></th>
<th>Group 1 Video Game</th>
<th>Group 2 Advergame</th>
<th>Group 3 Control</th>
<th>Total (All Groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>99</td>
<td>99</td>
<td>146</td>
<td>344</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>22.56</td>
<td>22.74</td>
<td>23.15</td>
<td>22.86</td>
</tr>
<tr>
<td>Median</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Mode</td>
<td>21</td>
<td>20</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>4.89</td>
<td>4.58</td>
<td>3.04</td>
<td>4.10</td>
</tr>
<tr>
<td>Min/ Max</td>
<td>17/ 42</td>
<td>17/ 38</td>
<td>17/ 37</td>
<td>17/ 42</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>68%</td>
<td>62%</td>
<td>49%</td>
<td>58%</td>
</tr>
<tr>
<td>Female</td>
<td>32%</td>
<td>38%</td>
<td>51%</td>
<td>42%</td>
</tr>
</tbody>
</table>
4.4.1.2 Operationalisation of ANOVA and ANCOVA

The data were examined to ensure they conformed to the assumptions of the ANOVA and ANCOVA techniques. In the current study, the assumptions were reasonably met. The data conformed to the assumption of normality as the dependent variables were normally distributed. There were no outliers, skewness and kurtosis were within acceptable parameters, and the means and standard deviations were credible. The variances were also approximately equal for the treatment groups. Levene’s test was used to check the equal variance assumption. This was necessary because the group sizes were unequal (Huck, 2004), unlike in the case of the pilot study. Further, the experimental design adopted meant respondents were selected at random and the groups were independent in their responses on the dependent variables. This is a key requirement if the ANOVA test procedure is to be valid (Hair et al., 2006). Finally, the significance level was established at .05 for the ANOVA and ANCOVA tests, consistent with study one.

4.4.2 Results of Hypothesis Testing

This section presents the results from testing each of the hypotheses. A summary of these results can be found at section 4.4.3.

4.4.2.1 Hypothesis 1

\[ H1: \text{An individual exposed to brand and product placement in a video game will report a higher Attitude to that Brand (A}^\text{BR}\text{) than a similar individual who has not been exposed to the placement.} \]

Hypothesis one stated that an individual exposed to video game product placement would report a higher brand attitude than an individual not exposed. However, no video game treatment effects were anticipated. In other words, the group means were expected to be equal.

Hypothesis one was tested in relation to Ford, which was featured in the video game as a use simulated and peripheral placement. Two groups were included as part of the analysis: those respondents who played the video game (n=99) and those not exposed to a game, that is, the control group (n=146). The scale for measuring attitude to the brand consisted of 3 items measured on 7-point Likert-type scales,
where 1 represented a lower or less favourable attitude and 7 represented a higher or more favourable attitude. The summated scale for brand attitude was used in the analysis.

Table 4.5 shows the mean scores of the attitude to the Ford brand for the video game and control groups. The results indicate that those respondents who were exposed to the Ford placement in the video game had a higher attitude to the brand than those who were not exposed to the game.

Table 4.5 Means of the Attitude to the Ford Brand for the Video Game and Control Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>4.12</td>
<td>1.62</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>3.88</td>
<td>1.25</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>3.98</td>
<td>1.41</td>
<td>245</td>
</tr>
</tbody>
</table>

n=245

To test whether the means were significant, a one-way analysis of variance was undertaken. The results indicate that there is not a significant difference in attitude to the Ford brand between individuals exposed to the Ford placements in the video game and individuals not exposed, at a 95% confidence interval (df=1; F=1.78; p>.05). As expected, hypothesis one is not supported. The results are presented in Table 4.6.

Table 4.6 Results of One-Way Analysis of Variance: Attitude to the Ford Brand by Video Game Exposure (Exposed Versus Not Exposed)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>3.56</td>
<td>1</td>
<td>3.56</td>
<td>1.78</td>
<td>0.18</td>
</tr>
<tr>
<td>Model</td>
<td>3.56</td>
<td>1</td>
<td>3.56</td>
<td>1.78</td>
<td>0.18</td>
</tr>
<tr>
<td>Error</td>
<td>484.55</td>
<td>243</td>
<td>1.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4365.56</td>
<td>245</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>488.11</td>
<td>244</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=245

4.4.2.2 Hypothesis 1a

H1a: An individual exposed to brand and product placement in a video game will report a higher Corporate Image (CI) of the brand's manufacturer than a similar individual who has not been exposed to the placement.
Hypothesis 1a stated that an individual exposed to placements in a video game would have a higher corporate image of that brand’s manufacturer than an individual not exposed to the placements. As in the case of hypothesis one, no significant effects were anticipated. The same procedures were followed to test this hypothesis, but the summated scale for corporate image was used in the analysis.

The scale for measuring corporate image consisted of 5 items measured on 7-point Likert-type scales, with 1 representing a lower or less favourable corporate image and 7 representing a higher or more favourable corporate image. The scale was summated for the Ford brand. Change in corporate image for the brand was measured by comparison of the results for two groups: those exposed to the video game (n=99) and those not exposed (n=146).

Table 4.7 shows the mean scores of the corporate image of the Ford brand for the video game and control groups. The results indicate that those respondents who were exposed to the Ford placement in the video game had a higher corporate image of the Ford brand manufacturer than those who were not exposed to the brand in the game.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>4.24</td>
<td>.94</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>4.22</td>
<td>.96</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>4.23</td>
<td>.95</td>
<td>245</td>
</tr>
</tbody>
</table>

A one-way analysis of variance was conducted to test whether the means were significant. Levene’s test of equality of error variances indicated that the assumption of equal variance was not violated ($df=1,243; F=0.41; p>.05$). Homogeneity of variance was therefore assumed. The results indicate that there is not a significant difference in the corporate image of the Ford brand manufacturer between individuals exposed to Ford video game product placement and individuals not exposed, at a 95% confidence interval ($df=1; F=0.02; p>.05$). Hypothesis 1a is therefore not supported. The results are provided in Table 4.8.
4.4.2.3 Hypothesis 2

H2: An individual exposed to brand and product placement in an advergame will report a higher $A_{BR}$ than a similar individual who has not been exposed to the placement.

Hypothesis two suggested that an individual exposed to product placement in an advergame would have a higher attitude to the brand than would an individual not exposed. As in the case of hypotheses one and 1a, this hypothesis was tested in relation to Ford, which was featured in the game. The summated scale for attitude to the Ford brand was used in the analysis to measure the responses of two groups: those who played the advergame ($n=99$) and those not exposed to a game ($n=146$).

The mean scores for advergame players and the control respondents are presented in Table 4.9. The results indicate that respondents exposed to the advergame had a higher attitude to the Ford brand than those respondents who were not exposed to the game and subsequently the Ford placement.

Table 4.9 Means of the Attitude to the Ford Brand for the Advergame and Control Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advergame</td>
<td>4.14</td>
<td>1.32</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>3.88</td>
<td>1.25</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>3.99</td>
<td>1.28</td>
<td>245</td>
</tr>
</tbody>
</table>

A one-way analysis of variance was performed to test whether the means were significant. Levene’s test of equality of error variances was not significant.
(\(df=1.243; F=0.24; p>.05\)), indicating that the data do not violate the assumptions of variance. The analysis shows that there is not a significant difference in attitude to the Ford brand between individuals exposed to its advergame product placement and individuals not exposed, at a 95% confidence interval (\(df=1; F=2.54; p>.05\)). Hypothesis two is therefore not supported. The results are presented in Table 4.10.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>4.17</td>
<td>1</td>
<td>4.17</td>
<td>2.54</td>
<td>0.11</td>
</tr>
<tr>
<td>Model</td>
<td>4.17</td>
<td>1</td>
<td>4.17</td>
<td>2.54</td>
<td>0.11</td>
</tr>
<tr>
<td>Error</td>
<td>398.45</td>
<td>243</td>
<td>1.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4296.00</td>
<td>245</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>402.62</td>
<td>244</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis 2a

H2a: An individual exposed to brand and product placement in an advergame will report a higher CI of the brand's manufacturer than a similar individual who has not been exposed to the placement.

Hypothesis 2a stated that an individual exposed to brand and product placements in an advergame would have a higher corporate image of the brand manufacturer than would an individual not exposed to the placement in the game. To test this hypothesis, the same procedures were followed as those for hypothesis two in that responses to the Ford brand were examined, but the summated scale for corporate image was used in the analysis. Two groups were tested, including those respondents who played the advergame (n=99) and those in the control group (n=146).

To measure the difference in corporate image for Ford, the means of the advergame and control groups were compared. These are shown at Table 4.11. The results indicate that those respondents who were exposed to the advergame placements for Ford had a slightly higher corporate image of the brand manufacturer than those who were not exposed to the game.
Table 4.11 Means of the Corporate Image of the Ford Brand for the Advergame and Control Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advergame</td>
<td>4.26</td>
<td>0.83</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>4.22</td>
<td>0.96</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>4.24</td>
<td>0.91</td>
<td>245</td>
</tr>
</tbody>
</table>

Using a one-way analysis of variance, the means were tested to determine whether they were significant. Levene’s test indicated that the assumption of equal variance was not violated for corporate image (df=1,243; F=0.89; p>.05). It was found that there is no significant difference in the corporate image of the Ford brand manufacturer between individuals exposed to its placement in the advergame and individuals not exposed to the placement (df=1; F=0.10; p>.05). Hypothesis 2a is therefore not supported. Table 4.12 presents the results of the analysis.

Table 4.12 Results of One-Way Analysis of Variance: Corporate Image of the Ford Brand Manufacturer by Advergame Exposure (Exposed Versus Not Exposed)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.08</td>
<td>1</td>
<td>0.08</td>
<td>0.10</td>
<td>0.75</td>
</tr>
<tr>
<td>Model</td>
<td>0.08</td>
<td>1</td>
<td>0.08</td>
<td>0.10</td>
<td>0.75</td>
</tr>
<tr>
<td>Error</td>
<td>202.88</td>
<td>243</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4604.08</td>
<td>245</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>202.96</td>
<td>244</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H3: Any main effect of exposure to brand and product placement in a video game or advergame on $A_{BR}$ and CI of the brand’s manufacturer will be influenced by:
- an individual's involvement with the product category
- an individual's skill level in the game
- an individual's skill level in relation to the medium generally, and
- the game’s perceived level of interactivity.

Hypothesis three suggested that an individual’s involvement with a placement’s product category, the player’s skill level in relation to the specific game and the
medium, as well as the game’s interactivity, may act as confounds in any effects of exposure to a placement on attitude to the brand and corporate image of the brand manufacturer. These factors were identified as covariates in the relationship between the independent and dependent variables. The hypothesis was tested in relation to the Ford brand.

Attitude to the Ford brand and corporate image of the Ford brand manufacturer were tested separately. Both represent distinct constructs, which necessitated independent analysis. An analysis of covariance was therefore performed for each. The summated scales were used to measure the two dependent variables, with a 3-item, 7-point Likert-type scale for attitude to the brand and a 5-item, 7-point scale for corporate image. Recall that one represented a lower attitude or corporate image and 7 a higher attitude or corporate image. Respondents in the two treatment groups, consisting of those who played the video game (n=99) and those who played the advergame (n=99), were included as part of the analysis, since they were exposed to product placement. The impact of gender as an independent variable was also explored. Age was included as an additional covariate.

Involvement was operationalised with regards to car involvement and represented one covariate in the analysis. Involvement was measured on a 6-item, 7-point Likert-type scale, with 1 representing lower car involvement and 7 representing higher car involvement. The summated scale was used in the analysis. Skill level in the game represented the second covariate and was measured using a single-item, 7-point Likert-type scale, where 1 represented lower skill level and 7 higher skill level. Similarly, skill level in relation to the game medium was measured using a single-item, 7-point Likert-type scale, where 1 represented lower skill level and 7 higher skill level. This represented the third covariate. In the case of the former, skill level in the game referred to the driving ability of the respondent in the specific video game (n=99) or advergame (n=99) that was played. The latter referred to a respondent’s proficiency in playing games generally. Below, these are referred to as ‘driving skill’ and ‘game skill’ respectively. The final covariate was interactivity, which was measured on a 17-item, 7-point Likert-type scale where 1 represented lower interactivity and 7 higher interactivity, as perceived by the game player. The summated scale was used in the analysis (the reasons for maintaining all 17 items in
the scale are discussed at section 4.3.2.3). Overall interactivity was also included in
the analysis as one final covariate. This was a single-item, 7-point Likert-type scale
measurement, where 1 represented lower overall interactivity of the game and 7
represented higher overall interactivity.

Attitude to the Ford brand was tested first. Table 4.13 shows the mean scores for
attitude to the Ford brand as the dependent variable; involvement, driving skill, game
skill, interactivity (with its many facets), overall interactivity and age as covariates;
and group and gender as independent variables. The results indicate that there is a
difference in attitude to the Ford brand by group, when allowing for involvement,
skill levels, interactivity and age.

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>Male</td>
<td>4.09</td>
<td>1.63</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.20</td>
<td>1.60</td>
<td>31</td>
</tr>
<tr>
<td>Advergame</td>
<td>Male</td>
<td>4.05</td>
<td>1.31</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.29</td>
<td>1.33</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>4.07</td>
<td>1.48</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.25</td>
<td>1.45</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.13</td>
<td>1.47</td>
<td>198</td>
</tr>
</tbody>
</table>

An analysis of covariance was conducted to determine the significance of the
difference between the groups. Levene’s test indicated that the equal variance
assumption was not violated ($df=3,194; F=1.29; p>.05$). The results of the analysis
are shown in Table 4.14.
Table 4.14 Results of Analysis of Covariance: Independent Variables of Gender and Treatment Group and Covariates of Involvement, Driving Skill, Game Skill, Interactivity, Overall Interactivity and Age, on the Dependent Variable of Attitude to the Ford Brand

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.02</td>
<td>1</td>
<td>0.02</td>
<td>0.01</td>
<td>0.92</td>
</tr>
<tr>
<td>Group * Gender</td>
<td>0.25</td>
<td>1</td>
<td>0.25</td>
<td>0.12</td>
<td>0.73</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car Involvement</td>
<td>2.34</td>
<td>1</td>
<td>2.34</td>
<td>1.18</td>
<td>0.28</td>
</tr>
<tr>
<td>Driving Skill</td>
<td>1.52</td>
<td>1</td>
<td>1.52</td>
<td>0.76</td>
<td>0.38</td>
</tr>
<tr>
<td>Game Skill</td>
<td>2.57</td>
<td>1</td>
<td>2.57</td>
<td>1.29</td>
<td>0.26</td>
</tr>
<tr>
<td>Interactivity</td>
<td>13.56</td>
<td>1</td>
<td>13.56</td>
<td>6.80</td>
<td>0.01</td>
</tr>
<tr>
<td>Overall Interactivity</td>
<td>4.77</td>
<td>1</td>
<td>4.77</td>
<td>2.39</td>
<td>0.12</td>
</tr>
<tr>
<td>Age</td>
<td>0.13</td>
<td>1</td>
<td>0.13</td>
<td>0.06</td>
<td>0.80</td>
</tr>
<tr>
<td>Gender</td>
<td>1.38</td>
<td>1</td>
<td>1.38</td>
<td>0.69</td>
<td>0.41</td>
</tr>
<tr>
<td>Model</td>
<td>51.05</td>
<td>9</td>
<td>5.67</td>
<td>2.85</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>374.69</td>
<td>188</td>
<td>1.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3810.67</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>425.74</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis of covariance showed no statistically significant effect on attitude to the Ford brand for the following:

- involvement (df=1; F=1.18; p>.05)
- driving skill (df=1; F=0.76; p>.05)
- game skill (df=1; F=1.29; p>.05)
- overall interactivity (df=1; F=2.39; p>.05), or
- age (df=1; F=0.06; p>.05).

The results however indicate that interactivity had a statistically significant effect on attitude to the brand (df=1; F=6.80; p<.05).

This finding was further explored by examining which specific interactivity factors would significantly covary with players’ attitude to the Ford brand. A second analysis of covariance was performed. Levene’s test indicated that the assumption of equal variance was not violated (df=1,196; F=3.71; p>.05). The results of the analysis are shown in Table 4.15.
Table 4.15 Results of Analysis of Covariance: Independent Variable of Treatment Group and Covariates of Reciprocity, Responsiveness, Nonverbal Information and Speed of Response, on the Dependent Variable of Attitude to the Ford Brand

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1.19</td>
<td>1</td>
<td>1.19</td>
<td>0.60</td>
<td>0.44</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reciprocity</td>
<td>1.90</td>
<td>1</td>
<td>1.90</td>
<td>0.95</td>
<td>0.33</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>11.22</td>
<td>1</td>
<td>11.22</td>
<td>5.60</td>
<td>0.02</td>
</tr>
<tr>
<td>Nonverbal Info</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
<td>0.03</td>
<td>0.86</td>
</tr>
<tr>
<td>Speed of Response</td>
<td>0.03</td>
<td>1</td>
<td>0.03</td>
<td>0.01</td>
<td>0.90</td>
</tr>
<tr>
<td>Model</td>
<td>41.14</td>
<td>5</td>
<td>8.23</td>
<td>4.11</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>384.60</td>
<td>192</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3810.67</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>425.74</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=198

Table 4.15 shows that the interactivity facet of responsiveness significantly affects attitude to the Ford brand (df=1; F=5.60; p<.05). A correlation was undertaken to determine the association between these variables. Responsiveness was found to be positively correlated with attitude to the Ford brand, though this is only a weak relationship (Beta=.30). An examination of $r^2$ showed that the four interactivity facets only account for approximately 10% of the difference in brand attitude change ($r^2=.097$).

In addition to brand attitude, the effect of the covariates on corporate image was also examined. Table 4.16 shows the mean scores for corporate image of the Ford brand manufacturer as the dependent variable; involvement, driving skill, game skill, interactivity (with its many facets), overall interactivity and age as covariates; and group and gender as independent variables. The results indicate that there is a difference in corporate image for Ford by group, when allowing for involvement, skill levels, interactivity and age.
Table 4.16 Means for Treatment Groups By Gender for Covariates of Involvement, Driving Skill, Game Skill, Interactivity, Overall Interactivity and Age, With Corporate Image of the Ford Brand Manufacturer as Dependent Variable

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>Male</td>
<td>4.23</td>
<td>0.93</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.25</td>
<td>0.99</td>
<td>31</td>
</tr>
<tr>
<td>Advergame</td>
<td>Male</td>
<td>4.30</td>
<td>0.81</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.20</td>
<td>0.87</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>4.26</td>
<td>0.87</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.22</td>
<td>0.92</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.25</td>
<td>0.89</td>
<td>198</td>
</tr>
</tbody>
</table>

n=198

An analysis of covariance was conducted to determine the significance of the difference between these groups. Levene’s test indicated that the equal variance assumption was not violated (df=3,194; F=0.58; p>.05). The results of the analysis are shown in Table 4.17.

Table 4.17 Results of Analysis of Covariance: Independent Variables of Gender and Treatment Group and Covariates of Involvement, Driving Skill, Game Skill, Interactivity, Overall Interactivity and Age, on the Dependent Variable of Corporate Image of the Ford Brand Manufacturer

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
<td>0.09</td>
<td>0.76</td>
</tr>
<tr>
<td>Group * Gender</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
<td>0.09</td>
<td>0.76</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car Involvement</td>
<td>2.09</td>
<td>1</td>
<td>2.09</td>
<td>3.02</td>
<td>0.08</td>
</tr>
<tr>
<td>Driving Skill</td>
<td>1.72</td>
<td>1</td>
<td>1.72</td>
<td>2.48</td>
<td>0.12</td>
</tr>
<tr>
<td>Game Skill</td>
<td>1.83</td>
<td>1</td>
<td>1.83</td>
<td>2.65</td>
<td>0.10</td>
</tr>
<tr>
<td>Interactivity</td>
<td>3.04</td>
<td>1</td>
<td>3.04</td>
<td>4.39</td>
<td>0.04</td>
</tr>
<tr>
<td>Overall Interactivity</td>
<td>3.67</td>
<td>1</td>
<td>3.67</td>
<td>5.30</td>
<td>0.02</td>
</tr>
<tr>
<td>Age</td>
<td>0.02</td>
<td>1</td>
<td>0.02</td>
<td>0.03</td>
<td>0.86</td>
</tr>
<tr>
<td>Gender</td>
<td>0.01</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.94</td>
</tr>
<tr>
<td>Model</td>
<td>24.83</td>
<td>9</td>
<td>2.76</td>
<td>3.98</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>130.19</td>
<td>188</td>
<td>0.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3732.24</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>155.01</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=198

The analysis of covariance for corporate image of the Ford brand manufacturer showed no statistically significant effect of the following:

- involvement (df=1; F=3.02; p>.05)
- driving skill (df=1; F=2.48; p>.05)

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The results however indicate that two covariates had a statistically significant effect: interactivity ($df=1; F=4.39; p<.05$) and overall interactivity ($df=1; F=5.30; p<.05$). It was necessary to further explore this finding to determine which interactivity factors would significantly covary with corporate image of the Ford brand. Another analysis of covariance was performed. Levene’s test indicated that the assumption of equal variance was not violated ($df=1,196; F=0.96; p>.05$). The results of the analysis are shown in Table 4.18.

Table 4.18 Results of Analysis of Covariance: Independent Variable of Treatment Group and Covariates of Reciprocity, Responsiveness, Nonverbal Information, Speed of Response and Overall Interactivity, on the Dependent Variable of Corporate Image of the Ford Brand Manufacturer

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.79</td>
<td>1</td>
<td>0.79</td>
<td>1.16</td>
<td>0.28</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reciprocity</td>
<td>1.12</td>
<td>1</td>
<td>1.12</td>
<td>1.66</td>
<td>0.20</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.01</td>
<td>1</td>
<td>6.01</td>
<td>8.86</td>
<td>0.01</td>
</tr>
<tr>
<td>Nonverbal Info</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
<td>0.09</td>
<td>0.77</td>
</tr>
<tr>
<td>Speed of Response</td>
<td>2.75</td>
<td>1</td>
<td>2.75</td>
<td>4.06</td>
<td>0.04</td>
</tr>
<tr>
<td>Overall Interactivity</td>
<td>5.87</td>
<td>1</td>
<td>5.87</td>
<td>8.66</td>
<td>0.01</td>
</tr>
<tr>
<td>Model</td>
<td>25.50</td>
<td>6</td>
<td>4.25</td>
<td>6.27</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>129.52</td>
<td>191</td>
<td>0.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3732.24</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>155.01</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.18 shows a statistically significant effect on corporate image for the following interactivity factors:

- responsiveness ($df=1; F=8.86; p<.05$)
- speed of response ($df=1; F=4.06; p<.05$), and
- overall interactivity ($df=1; F=8.66; p<.05$).

A correlation was undertaken to determine the association between each of these interactivity covariates and corporate image of the Ford brand manufacturer. Responsiveness (Beta=.31), speed of response (Beta=.18) and overall interactivity (Beta=.32) were found to be positively correlated with Ford corporate image. These are however only weak relationships. An examination of $r^2$ showed that all of the
interactivity facets plus overall interactivity account for only around 16% of the difference in corporate image change ($r^2=.164$).

In sum, hypothesis three is partially supported, but for only some of the interactivity factors.

### 4.4.2.6 Further Analyses

To confirm the results of the hypotheses, further analyses were performed to examine the difference between the experimental groups in terms of attitude to the Ford brand and corporate image of the Ford brand manufacturer.

First, attitude to the Ford brand was examined for all three experimental groups, including the treatment groups of video game (n=99) and advergame (n=99), plus the control group (n=146). The mean scores presented in Table 4.19 are the result of the summated scale. The results indicate that those respondents who were exposed to the Ford placement in the advergame had a slightly higher attitude to the brand than those who played the video game. Both groups in turn had a higher attitude to the Ford brand than those respondents who did not play a game. These results are somewhat indicative of the relationships that were anticipated prior to hypothesis testing.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>4.12</td>
<td>1.62</td>
<td>99</td>
</tr>
<tr>
<td>Advergame</td>
<td>4.14</td>
<td>1.32</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>3.88</td>
<td>1.25</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>4.03</td>
<td>1.39</td>
<td>344</td>
</tr>
</tbody>
</table>

An $n$-way analysis of variance was performed to test whether the means were significant. The analysis shows that there is not a significant difference in attitude to the Ford brand between individuals exposed to its placement in an advergame, those exposed to the placement in a video game, and individuals not exposed to a game, at a 95% confidence interval ($df=2$; $F=2.76$; $p>.05$). The results are presented in Table 4.20.
Table 4.20 Results of $n$-Way Analysis of Variance: Attitude to the Ford Brand by Group (Video Game Versus Advergame Versus Control)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>5.51</td>
<td>2</td>
<td>2.76</td>
<td>1.44</td>
<td>0.24</td>
</tr>
<tr>
<td>Model</td>
<td>5.51</td>
<td>2</td>
<td>2.76</td>
<td>1.44</td>
<td>0.24</td>
</tr>
<tr>
<td>Error</td>
<td>654.36</td>
<td>341</td>
<td>1.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6236.11</td>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>659.88</td>
<td>343</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=344

The mean scores of the corporate image of the Ford brand manufacturer were also examined for the three groups: video game (n=99), advergame (n=99) and control (n=146). These are presented at Table 4.21 and are the result of the summated scale. The results indicate that those respondents who played the advergame had a slightly higher corporate image of the Ford brand manufacturer than players of the video game. Both groups in turn had a slightly higher corporate image of the Ford brand than those respondents not exposed to a game. Again, these results are somewhat indicative of the relationships that were anticipated prior to hypothesis testing.

Table 4.21 Means of the Corporate Image of the Ford Brand for the Video Game, Advergame and Control Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>4.24</td>
<td>0.94</td>
<td>99</td>
</tr>
<tr>
<td>Advergame</td>
<td>4.26</td>
<td>0.83</td>
<td>99</td>
</tr>
<tr>
<td>Control</td>
<td>4.22</td>
<td>0.96</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>4.24</td>
<td>0.92</td>
<td>344</td>
</tr>
</tbody>
</table>

n=344

In order to test whether these means were significant, an $n$-way analysis of variance was conducted. Levene’s test indicated that the data do not violate the assumptions of equal variance ($df=2,341; F=1.13; p>.05$). The results reveal that there is no significant difference in the corporate image of the Ford brand manufacturer between individuals exposed to Ford advergame product placement, those exposed to Ford video game product placement, and individuals not exposed to placement in a game, at a 95% confidence interval ($df=2; F=0.05; p>.05$). The results are presented in Table 4.22.
Table 4.22 Results of $n$-Way Analysis of Variance: Corporate Image of the Ford Brand Manufacturer by Group (Video Game Versus Advergame Versus Control)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.08</td>
<td>2</td>
<td>0.04</td>
<td>0.05</td>
<td>0.95</td>
</tr>
<tr>
<td>Model</td>
<td>0.08</td>
<td>2</td>
<td>0.04</td>
<td>0.05</td>
<td>0.95</td>
</tr>
<tr>
<td>Error</td>
<td>290.08</td>
<td>341</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6471.40</td>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>290.16</td>
<td>343</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One final test was performed to examine the effect of game exposure on attitude to the brand and corporate image. All three groups were included as part of this analysis, but were collapsed into two groups: those exposed to a game including video game and advergame players (n=198) and those not exposed, or in other words the control group (n=146). The same summated scales for attitude to the Ford brand and corporate image of the Ford brand manufacturer were used in the analysis. Brand attitude was examined first.

A comparison of the two groups showed the means for those exposed to a game and those not exposed were different. As shown in Table 4.23, those respondents who were exposed to Ford product placement in a game had a higher attitude to the brand than those who were not exposed to the Ford brand in a game.

Table 4.23 Means of the Attitude to the Ford Brand for the Exposed and Not Exposed Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposed</td>
<td>4.13</td>
<td>1.47</td>
<td>198</td>
</tr>
<tr>
<td>Not Exposed</td>
<td>3.88</td>
<td>1.25</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td>4.03</td>
<td>1.39</td>
<td>344</td>
</tr>
</tbody>
</table>

Using a one-way analysis of variance, the means were tested to determine whether they were significant. Table 4.24 indicates that there is no significant difference in attitude to the Ford brand between individuals exposed to its placement in a game and individuals not exposed to a game ($df=1$; $F=2.87$; $p>.05$).
Corporate Image of the Ford brand manufacturer was also examined for the two groups, including those exposed to a game and those respondents who did not play a game. The mean scores for the two groups were found to be different, as reflected in Table 4.25. Respondents who were exposed to Ford product placement in a game had a slightly higher corporate image of the Ford brand manufacturer than those who were not exposed to the Ford brand in a game.

The means were tested to determine if the difference between them was significant, by performing a one-way analysis of variance. Levene’s test indicated that the data do not violate the assumptions of equal variance ($df=1,342; F=0.03; p>.05$). Based on the analysis, there is no significant difference in the corporate image of the Ford brand manufacturer between individuals exposed to a game and those not exposed to a game ($df=1; F=0.07; p>.05$). The results are presented in Table 4.26.
Overall, the results of the additional analyses confirm the findings from the hypothesis testing - there is no significant difference between individuals exposed to product placement through playing a game, whether a video game or advergame, and individuals not exposed to a game, in terms of attitude to the placed brand and corporate image of the brand manufacturer. These results indicate the experiment is clean.

There were however three tests where Levene’s showed violation: hypothesis one which was not supported ($df=1,243; F=13.06; p<.05$), and the two further analyses concerning attitude to the brand for all three groups ($df=2,341; F=7.19; p<.05$), as well as the exposed and not exposed groups ($df=1,342; F=5.83; p<.05$), neither of which came out. This was examined visually.

Figure 4.4 shows clearly that the mean scores of the attitude to the Ford brand were higher for the treatment groups exposed to a game stimulus than the control group. This is supported by the earlier analyses and hypothesis testing.

**Figure 4.4 Comparison of Means of the Attitude to the Ford Brand for the Video Game, Advergame and Control Groups**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>LS Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Game</td>
<td>F(2, 341)=1.4367, p=.23914</td>
</tr>
<tr>
<td>Advergame</td>
<td>Effective hypothesis decomposition</td>
</tr>
<tr>
<td>Control</td>
<td>Vertical bars denote 0.95 confidence intervals</td>
</tr>
</tbody>
</table>

n=344
The violation of equal variance did not occur for all groups. Figure 4.5 presents a normal distribution for attitude to the brand across the video game, advergame and control groups, though it is slightly peaked.

**Figure 4.5 All Groups Variance**

Examination of the dependent variable for each of the groups separately revealed that the video game group was normally distributed (see Figure 4.6).
Figure 4.6 Video Game Group Variance

Similarly, the histogram for the advergame group shows a good distribution, which is close to the normal curve (see Figure 4.7).

Figure 4.7 Advergame Group Variance

n=344
Figure 4.8, however, illustrates that distribution of attitude to the brand for the control group deviates slightly, as outliers are evident at the high point of the score.

**Figure 4.8 Control Group Variance**

![Histogram: FABR: Ford Brand Attitude Effect: GROUP
FABR = 146*0.5*normal(x, 3.879, 1.2557)](image)

n=344

The violation of Levene’s test of equality of error variances is recognised as a limitation at section 5.6. This prompts the need for further investigation using a larger sample. The fact that the histograms show polarisation on attitude to the Ford brand within each of the experimental groups also points to the need for samples of sub-groups of players. Ideas for future research are presented at section 5.7.

### 4.4.3 Summary of Findings

The main study examined a number of hypotheses to address the following research question:

*What is the effect of brand and product placements in games on the consumer’s response in terms of attitude to the brand and corporate image of the brand manufacturer?*

It was hypothesised that brand and product placement in a video game would not influence brand attitudes or corporate image (the alternative hypothesis is presented below), but that a small effect would be observed for placements in an advergame.
Any effects though were expected to depend on involvement, skill level and perceived interactivity. The outcome of the hypothesis testing is presented in Table 4.27.

<table>
<thead>
<tr>
<th>Number</th>
<th>Hypothesis</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>An individual exposed to brand and product placement in a video game will report a higher $A_{BR}$ than a similar individual who has not been exposed to the placement.</td>
<td>Hypothesis not supported.</td>
</tr>
<tr>
<td>H1a</td>
<td>An individual exposed to brand and product placement in a video game will report a higher CI of the brand's manufacturer than a similar individual who has not been exposed to the placement.</td>
<td>Hypothesis not supported.</td>
</tr>
<tr>
<td>H2</td>
<td>An individual exposed to brand and product placement in an advergame will report a higher $A_{BR}$ than a similar individual who has not been exposed to the placement.</td>
<td>Hypothesis not supported.</td>
</tr>
<tr>
<td>H2a</td>
<td>An individual exposed to brand and product placement in an advergame will report a higher CI of the brand's manufacturer than a similar individual who has not been exposed to the placement.</td>
<td>Hypothesis not supported.</td>
</tr>
<tr>
<td>H3</td>
<td>Any main effect of exposure to brand and product placement in a video game or advergame on $A_{BR}$ and CI of the brand’s manufacturer will be influenced by:</td>
<td>Hypothesis not supported for involvement.</td>
</tr>
<tr>
<td></td>
<td>- an individual's involvement with the product category</td>
<td>Hypothesis not supported for driving skill.</td>
</tr>
<tr>
<td></td>
<td>- an individual's skill level in the game</td>
<td>Hypothesis not supported for game skill.</td>
</tr>
<tr>
<td></td>
<td>- an individual's skill level in relation to the medium generally</td>
<td>Hypothesis not supported for interactivity. When controlling for interactivity of the game,</td>
</tr>
<tr>
<td></td>
<td>- the game’s perceived level of interactivity</td>
<td>Hypothesis supported for interactivity.</td>
</tr>
</tbody>
</table>
The findings suggest no significant effects of product placement on video game or advergame players’ brand attitude or corporate image, even when allowing for their involvement with the product category, driving skill and game skill. Game players however appeared to have a more positive attitude to the placed brand and corporate image of the brand manufacturer, when allowing for their perception of interactivity of the game.

This section has presented the findings of the research. These are discussed in the following section, with overall conclusions and implications then drawn in Chapter 5.

4.5 Discussion of Findings

The purpose of study two was to validate and expand on the findings of the pilot investigation, through execution of a field experiment. The research examined the potential for brand and product placements in two different types of games to improve attitude to the brand and corporate image. It was hypothesised that responses to different treatments of product placement, in terms of whether it was featured in a video game or advergame, would vary, as measured by the change in the dependent variables. The results however indicate no significant effects of product placement in games, except in the case where the game is perceived to be interactive. Explanations for the observed results are provided next.

4.5.1 Impact on Attitude to the Brand and Corporate Image Due to the Motivation of Gamers

The current study found that consumers’ attitude to a brand and corporate image of a brand manufacturer were not higher as a result of exposure to brand and product placement in a video game or advergame. In fact, no difference was found between individuals who played a game featuring product placement and those who did not, indicating that mere exposure has no effect. It is argued that these results are due to the constraints placed on brand information processing in a game context. Recall that information processing is an important determinant of an individual’s attitudinal response to a message (MacInnis and Jaworski, 1989). It is influenced by a host of
factors, as depicted diagrammatically at Figure 2.5. The first of these is an individual’s motivation.

Motivation, which is dependent on activated needs, directs the allocation of one’s attention and cognitive capacity (Mitchell, 1981; Petty and Cacioppo, 1986a,b). It therefore determines whether an individual will attend to and process a message with which they are presented (MacInnis and Jaworski, 1989). Processing motivation however can be reduced if other motivations are present at the time of exposure (Eysenck, 1984; Kahneman, 1973; Mitchell, 1981). It is suggested this may be the case in a game context, whereby gamers may lack the motivation to process placement messages because, at the time of exposure, their primary motivation is to play and win the game. Consistent with the pilot investigation, this would explain the results of the main study.

A key reason why people play is for the experience (Sweetser and Wyeth, 2005). This was demonstrated by respondents during the field experiment, as they were observed smiling and laughing, and in some instances yelling when they were losing their race. It was also witnessed that respondents were deeply involved in the games, suggesting that it is indeed the game play which is their primary goal object. The majority concentrated intently on the screen, at the same time commenting on their race position, crashes experienced, the damage on their vehicle, or the actions of other drivers. Players also spoke about the handling of the vehicles, their speed, and the realism of the graphics. It would seem then that a player’s attention and cognitive capacity is allocated to these aspects of the game action. As a result, placement message processing is unlikely.

Lutz (1985) and MacKenzie and Lutz (1989) argue consumers can have high motivation to process several goal objects at the same time, suggesting that a gamer may be motivated to not only play a game, but to also attend to product placement messages within it. Even if this were the case, however, it would not necessarily result in high levels of processing for either object (MacInnis and Jaworski, 1989). An individual’s attention is selective and their processing capacity a limited resource, which is allocated depending on processing motivation (Batra and Ray, 1985; Greenwald and Leavitt, 1984; Mitchell, 1981; Petty and Cacioppo, 1986a,b).
If other goal objects are the focus of attention, a consumer can be distracted from brand evaluation (Chaiken and Eagly, 1983; Park and Young, 1986), thereby hindering brand processing (MacKenzie, 1986; Mitchell, 1980; Petty and Brock, 1981).

In support, Grigorovici and Constantin (2004) highlight that game users are likely to allocate most of their attentional and processing resources to the encoding and storage of main messages (the game play), and less resources to secondary messages (placements). Indeed in other interactive media, this has also been found to be true. On the web, for example, active-control causes individuals to spend less time attending to ads (Lang et al., 2002). In a game context, the resources necessary for goal-oriented tasks during play may reduce resources to the point where the learning of placements is inhibited. Nelson, Yaros and Keum’s (2006) findings suggest this may be the case for peripheral brand placements, but the current study demonstrates even use simulated placements may not be processed. Recall that these two types were assessed independently in study one, while the brand in study two was both use simulated and peripheral.

In sum, the findings point to the fact that consumers are motivated to play the game itself and are distracted by this, which in turn would decrease their motivation to process any brand or product placement information. This focus may also leave them with insufficient cognitive resources to engage in extensive processing of a product placement message and/or its execution, even if they possessed the motivation to do so. As a result, attitudes would not be affected, as was observed in the current study.

4.5.2 Impact on Attitude to the Brand and Corporate Image Due to Opportunity

Needs and motivation depend not only on the individual but also the situation, because the circumstances of ad exposure impact on attention and brand information processing (Houston and Rothschild, 1978; Richins and Bloch, 1986). Opportunity moderates the relationship between motivation and information processing, and refers to the extent to which the circumstances surrounding ad exposure are favourable for processing to occur (Houston and Rothschild, 1978). It concerns
whether or not it is physically possible for an individual to engage in processing activities (Shimp, 2000). Therefore, even if an individual lacks the motivation to process a message, when a situation of higher opportunity is presented, the potential for attention and capacity to be allocated to a message is enhanced. It is for this reason that it was hypothesised that advergame placements would influence brand attitude and corporate image.

The number of stimuli in a game was identified in section 3.5.2 as a potential influence on opportunity, capable of overwhelming players if presented in excess. This is probably the case in a video game. In an advergame, however, there are fewer stimuli in the environment. This was expected to result in a higher level of opportunity, thereby enabling advergame players to engage in a degree of brand processing and demonstrate an attitudinal response after exposure to brand and product placement. Like in the case of video game players, however, no attitudinal effects were evident.

The video game and advergame selected for investigation in the study were distinctly different in terms of the number of stimuli they featured. While the *V8 Supercars* video game includes many different brands for the vehicles, vehicle signage and racetrack billboards, the advergame features only one parent brand: Ford. This brand plays a dominant role in the game, with only Ford vehicles driven on the race circuits and Ford billboards shown peripherally. Plus, consistent with the nature of advergames, *Ford Street Racing* is relatively simplistic in terms of its narrative, plot, characters, music, artwork and animation. It lacks the visual and auditory elements typical of other console games in the racing category. Study participants labelled it as easier, less real and less exciting than other racing games. All of these characteristics should have made placement processing easier. However, despite the fact that the advergame was far less sophisticated than the video game, and the brand emphasis was greater, the means recorded for brand attitude and corporate image were comparable between video game and advergame players. There was no significant difference between them (these findings are presented at section 4.4).

The reason for the observed results may be that, regardless of the number of stimuli present, players are incapable of processing placement messages because they are
distracted by other game-related activities. As discussed in the previous section, a player’s attention appears to be focused on the game play. Engagement with the game is so intense, that respondents in the current study were observed moving their bodies and the controller in the same direction as their steering in the race. Some players even spoke to the game, abusing it in some instances because they were losing. It is likely that such a level of engagement reduced the opportunity for players to dedicate any attention to the placements. The fact that some respondents asked for confirmation that they had driven a Ford vehicle is indicative (this was neither confirmed nor denied).

It is also possible that the presence of other people at the time of play served as a distraction. Observers were not specifically investigated in study two and were therefore not intentionally included as part of the experimental conditions, but subjects were asked to play the game ‘naturally’ at the location where they were recruited. Any friends or associates who happened to be present at the time were not asked to leave, nor be quiet, or perform any other action. In some instances, it was observed that these other parties involved themselves in the activity by looking over the players’ shoulders and offering words of encouragement, expressing their own feelings about the unfolding play, and verbally sharing their own game experiences. This was allowed, as it represents the natural conditions by which game play can occur. Social interaction is a key element for the enjoyment of games and represents an important reason why some people play (Lazzaro, 2004). It may however reduce the opportunity for placement processing.

The nature of the game playing experience and the intensity of the activity may therefore distract players from brand information processing activities. Regardless of whether they are playing a video game or advergame, opportunity may be reduced to such a low level that players are physically unable to process any brand information. A condition of weak motivation, as well as low opportunity, means attitudinal effects are unlikely, as demonstrated by the results.
4.5.3 Influence of Ability and Involvement on Attitude to the Brand and Corporate Image

Ability is also capable of impacting the relationship between motivation and information processing. It refers to an individual’s familiarity with the claims made in a message and their ability to comprehend them (Shimp, 2000). Under a condition of high ability, the potential for information processing is enhanced, because an individual possesses prior product knowledge and has the propensity to access it (Anderson and Jolson, 1980). Motivation is thereby increased, as is the potential for attention and cognitive capacity to be dedicated to the message (MacInnis and Jaworski, 1989). It was therefore hypothesised that involvement with a placement’s product category may act as a confound in any main effects of exposure to product placement in a game, on attitude to the brand and corporate image. Although involvement was found to have no effect in the pilot study, it was again examined, as it was anticipated that those with a higher level of product involvement would be most likely to demonstrate evidence of any attitudinal influence. The findings of the study, however, showed that involvement does not influence the response to brand and product placement in a video game or advergame.

Respondents in the current study were shown to have a level of involvement with cars, particularly with regards to their interest in them. Overall involvement however was not particularly strong, with a mean of 4.00 recorded, where one represented lower involvement and seven higher involvement. Nevertheless, this should have still been sufficient to facilitate placement processing (involvement was not so low as to suggest that respondents had no familiarity with the product category). Also, ability should have been enhanced since familiar brands were selected for investigation and since respondents were of a higher education (Anderson and Jolson, 1980). As in the case of study one, optimal experimental conditions should have been provided for any attitudinal effects to be demonstrated. The seeming inability of product involvement to influence involvement in a product placement message and subsequently attitudes, may therefore be due to constraints placed on accessing existing information from memory. The problem may be that, in a game, a player’s ability to access prior knowledge may be constrained, regardless of their level of product involvement. This suggests that even if
involvement had been higher in the current study, attitudes would not have been affected.

The findings of the pilot study pointed to the existence of several factors that may constrain ability in a game context, and prevent any beneficial outcomes as a result of involvement. One factor identified is the fact that, even if a gamer possesses product knowledge, it may not enter working memory due to the difficulty and ambiguity of product placement messages (Edell and Staelin, 1983; Yalch and Elmore-Yalch, 1984). The covert nature of placements (discussed at section 2.4.4) means they may not be recognised as promotional messages, thereby making their processing particularly difficult. It was anticipated that in an advergame, the presence of fewer brands would make the commercial intent more obvious, thereby offering the potential for ability to be enhanced. Thus, it was thought placement processing and subsequently attitudinal impact would be more likely. The results indicate, however, that ability may not be raised to a sufficient level to allow for placement processing. Consistent with the other findings, this is likely to be due to constraints stemming from involvement in the game.

As already established, at the time of placement exposure a gamer is distracted by other goal objects for processing. Their need to play and win the game demands attention, which is likely to leave gamers insufficient cognitive resources to process any brand or product placement information, regardless of whether there are fewer placements or the individual is involved.

Games are also involving by nature of their design. The medium itself possesses characteristics such as interactivity and vividness, which are likely to automatically elicit attention and thereby further increase involvement in game play. It should be recognised that while interactivity and vividness represent distinct features of the environment, some authors do not distinguish between the two (see, for example, Steuer, 1992). Fortin and Dholakia (2005) highlight this is not necessarily accurate, since certain forms of communication can be high or low on either dimension (take for example television, which is highly vivid but non-interactive). With respect to games, however, advances in technology have enabled the creation of environments
that are both interactive and vivid. These characteristics may place further constraints on processing ability.

Interactivity can impose additional information processing demands on individuals (Ariely, 2000), because managing it requires significant cognitive effort (Sicilia, Ruiz and Munuera, 2005). In a game, players are engaged in an active, controlled exercise, which demands not only their visual attention, but also motor actions (Grodal, 2000). This may constrain ability to the point where players are prevented from accessing any prior knowledge that may exist about the brands or products they see. Involvement is therefore unlikely to have any effect, because interactivity may divert attention and cognitive capacity from processing activities. Strained processing capacity may also mean that even involved gamers avoid interruptions to prevent information overload (Chandler and Sweller, 1991).

In games, the information presented also tends to be vivid. Vivid stimuli tend to produce superior recall (Shoemaker, 1996; Taylor and Thompson, 1982), which may explain why Nelson (2002) and Winkler and Buckner (2006) found strong recall for product placement in games. Prominent and distinctive placements may be better recalled as found in Nelson’s (2002) study, because they place less demands on processing resources. However, the constraints posed as a result of the vividness of the environment for game play, may limit a player’s ability to engage in the actual processing of brand stimuli. It may therefore be the case that a player has sufficient capacity to notice placements, but not to process them. Interestingly, some respondents in the current study recognised that they had driven a Ford vehicle in the game, as communicated to the researcher, but their attitudes were not affected.

As a result of all of these factors, it is likely to be the case that involvement in the game is so strong, that even gamers involved with placed products are unable to dedicate sufficient resources to their processing. Studies in the sponsorship literature have investigated the effects of event and product involvement on brand attitudes, finding that event involvement can serve as a distraction, which prevents advertising message involvement and processing, resulting in no effect on attitudes (Lardinois and Derbaix, 2001; McDaniel, 1999). Likewise, game involvement may represent the greatest obstacle for attitudinal responses to be generated from placements.
4.5.4 Influence of Skill Level on Attitude to the Brand and Corporate Image

Competence has been suggested to enhance a user’s experience in a mediated environment (Howe and Sharkey, 1998). Skill level was therefore identified as a potential confound that could influence the response to brand and product placement in a video game and advergame, in terms of attitude to the brand and corporate image of the brand manufacturer. It was hypothesised that this would covary with any main effects of exposure, as it was expected to impact information processing. Specifically, two covariates were identified: skill level in the game played (referred to as driving skill) and skill level with regards to the game medium generally (labelled game skill). The findings showed that neither driving skill nor game skill have any effect.

The skill level reported by players was low. With regards to proficiency in playing games generally, the respondents in both groups were quite evenly matched. Video game and advergame players recorded means of 3.82 and 3.58 respectively, where one represented lower skill level and seven higher skill level. It must be recognised, however, that the survey item probably needed to be more specific for racing games (this is recognised as a limitation at section 5.6). Comments made by respondents indicate that gamers tend to play specific genres and platforms, which may require distinct skill sets (for example, strategy games on PC, racing and adventure games on consoles, and so on). The rating for driving skill indicates that many respondents were probably not racing game players.

Driving skill achieved a mean of 2.28 for video game players and 3.39 for advergamers. These low scores however are not particularly surprising, considering that games are intentionally challenging. This is consistently identified as the most important aspect of good game design (see, for example, Sweetser and Wyeth, 2005) and serves as a key motivator for people to play (Kim, 1995; Kim et al., 2002). Indeed, observations recorded in the current study confirm the competitive and challenging nature of games. This may, however, represent a further constraint placed on information processing.

The low ratings for skill level would suggest that respondents found playing the games difficult. Cognitive resources would have been strained as a result, thereby
potentially preventing players from dedicating sufficient attention and capacity to the processing of placements. Subsequently, attitudes would not have been affected, as observed in the study. This may explain why Bambauer (2006) found evidence of attitude change stemming from placements, since his sample was made up of regular game users. In a similar vein, logic would dictate that when a game is easier and the game play more straightforward, then players should possess greater cognitive capacity for message processing. In other words, a simpler game may free up cognitive resources and allow players to focus on placements (perhaps subconsciously). Winkler and Buckner (2006) offer this as a reason as to why gamers exhibited high brand recall in their study.

In the current investigation, the higher score for driving ability amongst advergame players suggests the advergame was easier, since respondents were approximately equal in terms of their general game playing proficiency. A higher skill level suggests that these respondents should not have been so involved in dealing with the game concept, and hence should have been better able to focus on the placements. There was little difference however between the two groups in terms of the mean scores for attitude to the brand and corporate image. The reasons are likely to be the same as in the case of a video game. Although it may be easier, players are still immersed in the game play. The findings of the current study appear to be consistent with those of Chaney, Lin and Chaney (2004) who found no association between the experience level of gamers and their level of recall. Whether they are highly skilled or not, the attention of players is on the game itself.

The low score for skill may have also eliminated any potential for attitudes to be affected as a result of flow, which is an important consideration for understanding consumer responses in interactive environments (Hoffman and Novak, 1996). Flow can result in increased brand preference (Kim and Biocca, 1997) and positive subjective experiences (Hoffman and Novak, 1996). It generally occurs in structured activities where action follows action (Privette, 1983), as is the case in a game. It can also occur regardless of whether an individual’s behaviour is goal directed or experiential (Hoffman and Novak, 1996). Hoffman and Novak (1996) highlight, however, that two antecedents must be present for an individual to experience a flow state. First, consumers must screen out irrelevant perceptions and thoughts and
focus their attention on the interaction. Second, they must perceive that the challenges of the interaction and their skills are congruent. The findings of the current study would suggest this second condition was not satisfied.

The findings suggest that gamers are focused on the game play (the interaction), with this focused attention facilitated by the vivid and involving nature of the game. As a result, players appear to filter out irrelevant content, which explains why they did not attend to brand and product placement, and therefore why their attitudes and image perceptions were not affected. Considering the poor skill level recorded for players, however, it seems gamers did not perceive congruency between the interaction challenges and their skills. Had further time been allowed for game play (which would be more true to how consumers use games), skills may have improved over the course of the experiment and allowed subjects to enter a flow state. This does not mean, however, that attitudes would have necessarily been affected as a result.

Flow can be distracting (Hoffman and Novak, 1996) and has been linked to over-involvement, which can lead to mental and physical fatigue (Csikszentmihalyi, 1977; Hoffman and Novak, 1996). It is also capable of enhancing presence, which can facilitate even greater involvement (Novak, Hoffman and Yung, 2000). Flow (and presence) can come about as a result of the presentation of intense auditory and visual stimuli, which may be overwhelming for consumers, as discussed earlier. This suggests that even if skill level had been higher in the current study, which may have facilitated a flow state, this still may not have influenced gamers’ attitudinal response to brand and product placement, as it would have further constrained their ability to process messages. An individual has a limited capacity to absorb and process information, and this appears to already be constrained in a game.

Notably, Bambauer (2006) found that flow positively affects attitude toward a game, which in turn positively affects attitude toward a brand. It is not surprising the regular game users he surveyed had the necessary skills for flow to be experienced, but Bambauer (2006) found no evidence of a direct link between flow and attitude change. This supports the earlier conclusion that perhaps processing was constrained as a result of flow, suggesting that the attitudinal effects observed stemmed from the
occurrence of excitation transfer (Zillmann, 1991). This theory is discussed in the following section.

4.5.5 Influence of Interactivity on Attitude to the Brand and Corporate Image

One key characteristic that distinguishes games from other media traditionally used for product placement is the fact they are interactive. Johnson, Bruner and Kumar (2006) define interactivity as the extent to which an individual perceives a communication to allow mutual action, to provide responses that are appropriate and relevant, to respond immediately, and to provide non-verbal information. They therefore recognise four facets: reciprocity, responsiveness, speed of response and nonverbal information. Perceived interactivity, which represents a combination of these factors, was identified as a potential covariate in the current study. It was hypothesised that a game’s perceived level of interactivity would co-vary with any main effects of exposure to brand and product placement in games. The study offers support for this hypothesis.

The findings indicate that, when controlling for interactivity, players experienced a more favourable attitude to the placed brand and corporate image of that brand’s manufacturer. Further examination revealed, however, that only some facets had a significant main effect. Responsiveness was found to have a significant positive effect on brand attitude, as well as corporate image. Speed of response was also found to have a significant positive effect on corporate image. This finding, along with the factor analysis presented earlier in Chapter 4, demonstrates that these two facets are the most important determinants of user perceptions of interactivity and the ones most likely to prompt an attitudinal response to placements. In other words, the more responsive the game, the more likely a brand and product placement will positively affect attitude to the brand. Plus, the quicker this response, the more likely corporate image of the manufacturer will also be positively affected.

The most plausible explanation for the observed results is that the responsiveness of the game and the speed of this response put players in a positive frame of mind, which resulted in them rating the placed brand higher. In other words, if a video game or advergame is responsive, it may favourably impact on attitude to the brand and corporate image, because it creates a more enjoyable experience for the player,
which translates into more positive evaluations of placed brands. This may occur as a result of excitation transfer (Zillmann, 1971, 1983, 1991), whereby a player may incorrectly attribute some of the arousal generated by the game, and transfer it to the placement. Such a transfer would explain why the mean scores for game players in this study were higher overall, than for respondents not exposed to a game (even though in most instances they were not significant). It may also be responsible for Bambauer’s (2006) finding that positive evaluations of a brand placement and game lead to a positive change in brand attitude.

Emotional responses can stem from a message, its execution or the viewing context (MacInnis and Jaworski, 1989). This would mean that despite the fact gamers appeared to lack involvement in the product placement message and execution as discussed previously, it would be possible for positive arousal to transfer from the game scenes (in which gamers are involved) to the products or brands within them. In general, it has been found that the direction of the experienced emotion or mood will determine whether the impact on subsequent stimuli is positive or negative. Although the findings suggest it was positive in this instance, even negative arousal generated (perhaps as a result of poor skills) would have still been capable of influencing responses to placement messages, even if it meant in terms of negative attitudes towards the brands.

The basic premise as to why affect generated by a stimulus (such as a game for example), can influence responses to subsequent stimuli (such as a brand or product placement) is that when an individual is highly aroused (positively or negatively), they become preoccupied with the cause of this arousal (Mathur and Chattopadhyay, 1991; Zillmann, 1971). As a result, this can influence their response to subsequent stimuli. However, in such a situation, the effect on attitudes is unlikely to be strong, consistent with the results. The effect of interactivity and the aforementioned factors was found to be small; the correlations ranged between .18 and .31, indicating very weak relationships. Therefore, although statistically significant, the effect is so small as to probably lack practical significance (Huck, 2004). Nevertheless, it does speak to the importance of fit and the need for placements to match the context of the game, so that relevant and appropriate responses are provided (this was highlighted
in Chapter 2). Respondents in the current study emphasised the importance of realism within the gaming environment.

Excitation transfer may not strongly influence attitudes, because when an individual is highly aroused, they are likely to allocate more attentional resources to this arousal and its source (Mathur and Chattopadhyay, 1991). This may therefore serve as a distraction, which prevents the learning of a commercial message and impedes persuasive attempts. Indeed in ad contexts, very high levels of program-evoked arousal can be counterproductive (Newell, Henderson and Wu, 2001). In a study of the effects of excitation transfer on learning, Easterbrook (1959) found that in recalling a series of numbers, emotionally aroused subjects experienced poorer memory performance. A number of other studies of television and film media have produced similar results, demonstrating that when viewers are emotionally aroused (children and adults), they recall fewer commercials and exhibit poorer memory performance in terms of recall of facts; as well as brand, product and copy recognition, than subjects exposed to low-excitation film/program content (Cantor, Mody and Zillmann, 1974; Douglass, 1981; Meyers-Levy and Sternthal, 1993; Mundorf, Zillmann and Drew, 1991; Newell, Henderson and Wu, 2001; Scott and Goff, 1988). This has also been found to be the case with regards to strong moods, which can lead to fewer advertisement-directed cognitive responses being produced (Mathur and Chattopadhyay, 1991).

In relation to games, Grigorovici and Constantin (2004) suggest the structural features of a virtual environment in 3D gaming increase affective engagement with the environment. However, it is doubtful this will increase engagement with placement messages. The strong positive arousal experienced as a result of the interactive nature of the game play, may divert attention from brands/products placed in the medium and further constrain a player’s ability to process them, thereby negating any influence on attitudes. The cue-utilisation theory holds that arousal level affects performance by determining the number of cues or sources of information that an individual can effectively monitor (Easterbrook, 1959). High arousal leads to high attentional selectivity, because an individual is unable to divide their attention across many sources of input. This suggests that an individual will focus their attention on one source of information (such as the game play) while
ignoring others (for example placements). High arousal may therefore only be beneficial when relatively few cues have to be monitored, unlike in the case of a game where multiple stimuli are present in multiple forms (speech, sound, static graphics, active visuals, animation). Indeed, Grigorovici and Constantin (2004) found that the more arousing a game, and subsequently the higher the player’s involvement in it, the lower the brand recall and recognition. If high levels of program involvement can result in reduced processing of subsequent commercials (Bryant and Comisky, 1978; Kennedy, 1971; Soldow and Principe, 1981; Thorson et al., 1985), then high levels of game involvement are also likely to reduce the processing of brand and product placements, particularly since gamers are exposed to these at the time of game play, not following.

In response to the other findings of this research, it has been argued that placements in games are unlikely to influence the brand attitudes and corporate image held by players, due to constraints placed on information processing. The previous discussion illustrates that arousal may represent a further constraint. Although interactivity was found to have a positive effect, it is maintained that this is unlikely to be due to any processing of the message. If this had occurred, stronger effects would have been demonstrated. Instead, it is argued this is solely the result of the arousal generated in response to the interactivity of the game transferring to the placed brand. There is one further factor that supports this conclusion and explains why processing is unlikely to have occurred.

Players may have been prevented from processing placements as a result of interactivity itself. This may explain why only a small effect for interactivity was observed and indeed why some facets were found to have no effect. Respondents in the current study rated the games as being highly interactive. The summated scale for perceived interactivity achieved a mean of 5.27 for the video game and 5.05 for the advergame, where one represented lower perceived interactivity and 7 higher interactivity. The facet of reciprocity achieved a mean of 4.81, indicating that respondents perceived the game had many features that provided opportunities for them to act. They also perceived game responses as being highly relevant and appropriate (overall mean for responsiveness was 5.05). Further, respondents indicated the game provided a lot of nonverbal information (mean equals 5.59) and
that its responses to commands were speedy (mean for speed of response was 5.19). It is possible the high scores for interactivity observed in the study, thereby reduced the potential for attention and capacity to be dedicated to the placements.

Johnson, Bruner and Kumar (2006) demonstrate a positive relationship between interactivity and involvement. They highlight that the more interactive the communication, the more involved a user becomes. However, in the context of a game, this is likely to increase involvement in the game play. Nicovich (2005) suggests that the greater the degree of involvement with the computer-mediated communication situation (the game) the stronger the evaluation of the communication (product placement), but in the case of a game, this is not a player’s primary goal object. As already established, players appear to be focused on the game action, and thereby lack the motivation to dedicate attention and capacity to any placements. Interactivity may serve to only reinforce this.

It was identified earlier that interactivity can be distracting (Hoffman and Novak, 1996) and may constrain processing opportunity and ability. Greater information control facilitated by interactivity can lead to better memory performance (Ariely, 2000), which may explain why Nelson (2002) found gamers were able to recall brands in a game. When demands on processing are high however (such as in a game due to the interactivity of the game play), consumers may be unable to process placements, due to insufficient cognitive capacity (Bezjian-Avery, Calder and Iacobucci, 1998). Johnson, Bruner and Kumar (2006) highlight that too many sources of information can cause cognitive overload. The effort involved in processing this information can become so great, that the mental resources available for other tasks, such as placement processing, are reduced.

One final relationship between interactivity, placements and attitudes must be examined. Aside from perceived interactivity, which included Johnson, Bruner and Kumar’s (2006) four facets, overall interactivity was also identified as a potential covariate in the current study. Respondents were questioned about whether the game was interactive overall, to test whether this would co-vary with any main effects of exposure to brand and product placement. Overall interactivity was found to significantly affect corporate image, but not attitude to the brand. Again, however,
only a weak relationship was identified (Beta=.32). It is suggested that the reason for this relationship is the same as in the case of perceived interactivity, in that the emotional responses generated by the interactive condition transferred to the placement. It is interesting to note, however, that only a moderate relationship was detected between the two constructs of perceived interactivity and overall interactivity (Beta=.55). Further, overall interactivity achieved a higher mean score for the video game (mean equals 5.45) and advergame (mean equals 5.19), than did perceived interactivity. It is suggested that the second order construct for measuring overall interactivity should be deleted. Simply asking whether a medium or media vehicle is interactive is probably inadequate to capture the complexity of interactivity and the many dimensions which define it.

4.6 Conclusion
The major finding of study two is that brand and product placements in games have no effect on players’ brand attitudes or corporate image. Overall, there is no difference in attitudes between individuals exposed to a game featuring product placement and those not exposed. The current research indicates that players are unable to engage in the processing necessary for attitudinal impact to be achieved, because they lack the motivation, opportunity and ability to do so. As a result, it does not matter whether a brand or product placement is featured in a video game or advergame, attitude to the brand and corporate image of the brand manufacturer are not affected. Product involvement and player skill level, both in the game and in relation to the medium generally, have no influence on this outcome. Likewise, age and gender have no impact.

The only effect appears to be through the interactivity of a game. The results suggest that the more interactive the game, as perceived by a player, the more positive the effect on brand attitude and corporate image. Specifically, a positive, but weak relationship was found between responsiveness and attitude to the placed brand, indicating that the more a player perceives a game to provide highly relevant responses, the higher their brand attitudes. Also, a positive relationship was found between corporate image and several interactivity-related conditions: responsiveness, speed of response and overall interactivity. In other words, the more a player
perceives a game to provide highly relevant responses, and the quicker these responses, the more positive their corporate image ratings for placed brands. Further, the higher they rate the overall interactivity of a game, the more positive the corporate image.

It is suggested that these findings are the result of emotional responses to the game’s interactivity transferring to the placed brand, leading players to rate it more highly. It is unlikely that information processing is responsible for the observed results, because consistent with the other findings, it appears that gamers are distracted from processing activities by their focus on the game play. Their motivation to process placements is further constrained due to the situational circumstances surrounding exposure which limit opportunity, and due to constraints placed on individual-level cognitive resources which limit ability. The influence of interactivity however is noteworthy, since it represents a key characteristic of the game medium. Its influence on attitudinal responses to product placement provides an area for future research, as discussed in the following chapter.
5.0 CONCLUSIONS AND IMPLICATIONS

5.1 Introduction

Product placement in games is fast becoming a popular form of marketing communications, as reflected in the practitioner marketing literature. Little academic attention has been dedicated to this area. Academic research has failed to keep pace with marketing practice, resulting in a situation where practitioners are pursuing this strategy based on assumptions concerning positive outcomes, not evidence. As discussed in Chapter 1, the number of brand appearances in games is increasing and is being encouraged by developments in the marketplace, including changes in the marketing communications landscape, trends in the game industry, and other industry developments facilitating access to the medium.

The need for information is made even more critical due to the fact that there has been a lack of research performed in the product placement domain overall, as discussed in Chapter 2. This means that not only are practitioners operating based on assumptions, but these have been formed in the absence of a fundamental understanding of product placement itself. Research concerning the influence of product placement in film and television has tended to focus on brand memory outcomes and has produced mixed results (see, for example, Babin and Carder, 1996a,b; Baker and Crawford, 1996; Karrh, 1994; Ong and Meri, 1994; Tiwsakul, Hackley and Szmigin, 2005; Vollmers and Mizerski, 1994; Yang, 2004; Zimmer and DeLorme, 1997). Furthermore, insufficient attention has been given to product placement’s ability to facilitate attitudinal and behavioural responses, even though positively influencing attitudes and behaviour are often goals in pursuing the strategy. Consumer memory remains the most common measure of product placement effectiveness, despite the fact product placement studies have found no correlation between memory and attitude measures (Babin and Carder, 1996a; Russell, 2002; Vollmers, 1995; Vollmers and Mizerski, 1994).

Assumptions concerning the strategy have also been formed in the absence of an understanding concerning the game medium. The application of the existing body of literature to a game context is problematic and using this as a basis for action poses
risks, since games possess characteristics which make them distinct from traditional media. Chapter 2 presented a discussion of game characteristics drawing largely on research pertaining to the internet, as there has been a lack of work concerning the characteristics of games and their influence.

With regard to product placement in games and its effects, only a handful of studies offer insights (introduced in Chapter 2). Some of these have explored product placement in video games, finding a positive impact on brand recall (Nelson, 2002; Schneider and Cornwell, 2005). Others have investigated brand awareness outcomes stemming from placements in computer and online games (including advergames), reporting only weak effects on brand recall and recognition (see, for example, Chaney, Lin and Chaney, 2004; Grigorovici and Constantin, 2004; Hernandez, Suh and Minor, 2005; Nelson, Yaros and Keum, 2006; Yang et al., 2006). The only exception is Winkler and Buckner’s (2006) investigation of web-based advergames, which found relatively high levels of recall. A further two qualitative studies report that players can remember placed brands (see, for example, Kuhn, Pope and Voges, 2007; Molesworth, 2006). Finally, only two studies exist which have explored other consumer behaviour constructs: Bambauer’s (2006) investigation, which found placements in a console video game positively change attitude to the brand and Mallinckrodt and Mizerski’s (2007) study of an online advergame, which found a positive effect on brand preference, but not on beliefs or intentions.

A review of the extant literature reveals a significant gap concerning the influence of game placements. To address the need for further research, the studies central to this thesis sought to answer the research question, ‘What is the effect of brand and product placements in games on consumers?’ It sought to understand the effect on consumers in relation to attitudinal and corporate image responses. Two studies were conducted to address this research question.

Chapter 3 presents the details for study one: a pilot investigation, which employed a laboratory experiment with a small sample to understand the effects of placements in a console video game. Specifically, it sought to identify the effects of use simulated and peripheral placements on players’ and observers’ attitude to the brand and corporate image, and whether responses are influenced by gamer involvement in a
placement’s product category or player skill level. The results reveal that brand and product placements in a video game do not positively influence the brand attitudes or corporate image of game players or observers, regardless of whether a product is simulated in use in the video game or a brand is placed peripherally. Product category involvement and player skill level have no influence on this relationship. The study does confirm, however, that gamers can recall brands placed in a video game.

The purpose of study one was to gain preliminary insights that would aid in the development of hypotheses concerning attitudinal effects. Based on the findings, and literature from the marketing communications and consumer behaviour disciplines, a number of hypotheses were developed. It should be noted that the null hypothesis was argued in the case of H1 and H1a. The hypotheses are as follows:

**H1:** An individual exposed to brand and product placement in a video game will report a higher Attitude to that Brand \( (A_{BR}) \) than a similar individual who has not been exposed to the placement.

**H1a:** An individual exposed to brand and product placement in a video game will report a higher Corporate Image \( (CI) \) of the brand’s manufacturer than a similar individual who has not been exposed to the placement.

**H2:** An individual exposed to brand and product placement in an advergame will report a higher \( A_{BR} \) than a similar individual who has not been exposed to the placement.

**H2a:** An individual exposed to brand and product placement in an advergame will report a higher CI of the brand’s manufacturer than a similar individual who has not been exposed to the placement.

**H3:** Any main effect of exposure to brand and product placement in a video game or advergame on \( A_{BR} \) and CI of the brand’s manufacturer will be influenced by:

- an individual's involvement with the product category
- an individual's skill level in the game
- an individual's skill level in relation to the medium generally, and
- the game's perceived level of interactivity.

While study one examined the influence of placements in video games specifically, the findings pointed to the need to investigate an advergame also. An advergame stimulus was therefore included for the main study. Further, the pilot results indicated no difference between use simulated and peripheral placements, or between players and observers. Therefore, the brand investigated in study two was both use simulated and peripheral, and only the responses of players were tested. The covariates of involvement in the product category and skill level in the game were maintained in the main study, but two additional covariates were identified: skill level in relation to the medium generally and perceived interactivity. Overall, it was hypothesised that product/brand placement in a video game would not affect players’ brand attitudes or corporate image, but that placements in an advergame would have a small influence, depending on involvement, skill level (in relation to the game specifically and medium generally), as well as perceived interactivity.

To test the hypotheses, a field experiment was conducted, which involved a large sample of respondents (n=350). This addressed the limitations of study one pertaining to external validity. Chapter 4 outlines the research method employed and provides details of the statistical techniques for data analysis. The results of the hypothesis testing are also presented. These results reveal that product placement in video games and advergames has no effect on players’ brand attitudes or corporate image, even when allowing for their involvement with the product category, driving skill and game skill. However, perceived interactivity has an influence, whereby the more interactive a player perceives the game to be, the more positive their attitude to the placed brand and corporate image of the brand manufacturer. Specifically, the more a player perceives a game to provide highly relevant responses, the higher their brand attitude. Further, the more a player perceives a game to provide highly relevant responses, the quicker these responses, and the higher they rate the overall interactivity of a game, the more positive their corporate image ratings for placed brands. Chapter 4 examines these findings in the context of the literature and offers explanation for the results.
The current chapter summarises the findings of the studies and draws overall conclusions. The contribution made by the research and its implications for theory and practitioners are also provided. Finally, recognition is given to the limitations of the research and ideas are presented for future investigations.

5.2 Overall Conclusions

Combined, the results of the two studies performed for this research indicate that placements in games do not produce strong attitudinal responses. Whether a use simulated and/or peripheral placement is featured in a video game or advergame, it has no effect on players’ attitude to the brand, or corporate image of the brand manufacturer. Even in the case of a video game observer, their attitudes are not affected. Further, gamer involvement in a placement’s product category and player skill level, with regards to the medium generally and game specifically, have no influence on this outcome. Even the age and gender of a player have no impact. The only effect is through the interactivity of the game, whereby the more interactive a player perceives the game to be, the higher their attitude to a placed brand and corporate image of its manufacturer. The effects however are very weak.

It is concluded that the nature of the game medium, game playing experience and product placement messages preclude the information processing necessary for attitude formation, thereby eliminating the potential for attitudes to be affected. Each of these issues is discussed next. First, the nature of information processing is examined.

5.2.1 The Nature of Information Processing

Information processing is an important precursor to attitude change and persuasion (Batra and Ray, 1986a; Bauer, 1958; Cacioppo, Harkins and Petty, 1981; Greenwald and Leavitt, 1984; Klapper, 1960; Krugman, 1965; Petty and Cacioppo, 1983, 1986a,b; Shapiro, MacInnis and Park, 2002), and forms the foundation for MacInnis and Jaworski’s (1989) integrative attitude formation model, the focal theory and framework used in this thesis for understanding the effects of placements in games. Essentially the extent of brand information processing (whether it is high, medium or low) influences the type of consumer response to ad exposure (including cognitive
and emotional responses), thereby having a determining influence on attitudes (Batra and Ray, 1986a; Cacioppo, Harkins and Petty, 1981; MacInnis and Jaworski, 1989).

The literature suggests that when brand processing is very high (in other words, when motivation and involvement are strong), consumers focus attention on brand-relevant ad information and process it deeply, using cognitive processes and long-term memory (Mitchell, 1981, 1983). An individual can also go beyond what is presented in an ad and construct product attributes, benefits, uses or usage situations, which in turn generate emotional responses (Alba and Hutchinson, 1987; Greenwald and Leavitt, 1984; Kisielius and Sternthal, 1984; Lang, 1979; MacInnis and Price, 1987). In both instances, brand attitudes are affected, but in the former case this is due to cue importance, message persuasiveness (Moore and Reardon, 1987; Petty and Cacioppo, 1979; Petty, Cacioppo and Schumann, 1983) and relevance (Friedman and Friedman, 1979; Kahle and Homer, 1985). In the latter case, the brand attitude formation process is based on the thoughts, ideas and arguments generated by the ad viewer rather than the message, and can lead to the occurrence of ‘role-taking’ (MacInnis and Jaworski, 1989; Tesser, 1978). Overall, when brand processing is high, cognitive responses as well as emotions contribute to the formation of brand attitudes, which are suggested to be more stable and more confidently held than those formed when processing motivation is lower (Park and Mittal, 1985; Petty and Cacioppo, 1986a,b).

Where there is a medium level of processing, brand attitudes may be affected, but this is likely to be due to affect created by ad cues such as likable or attractive characters, visually appealing scenes or music for example (Aaker, 1985; Chaiken, 1980; MacInnis and Price, 1987; Park and Young, 1986). This can lead to a retrieval of emotions or memories/ elaborations not related to the message, resulting in biased evaluations of the ad and brand (Gardner, 1985; Isen et al., 1982; Mitchell, 1988; Srull, 1983). In this situation, brand attitudes are formed based on the evaluation of learned information rather than message persuasiveness, because the consumer does not allocate sufficient attention for critical analysis to occur (Mitchell, 1981, 1983). This can still lead to the formation of strong brand beliefs over time as a result of a conditioning effect.
Finally, when brand processing is low, recognition of salient ad features may be the only response a consumer demonstrates (MacInnis and Jaworski, 1989). Ad features may also trigger an emotional reaction (for example a song may elicit high arousal) (Mehrabian, 1972), but brand attitudes are unlikely to be affected (Heath and Gaeth, 1987). Limited brand processing would explain why this study and others have found positive memory effects for placements (see, for example, Babin and Carder, 1996b; Baker and Crawford, 1996; Nelson, 2002; Vollmers and Mizerski, 1994; Zimmer and DeLorme, 1997), but why no effect was found on attitudes.

Limited processing occurs when constraints on the antecedents of motivation, opportunity and ability prevent attention and cognitive capacity from being dedicated to a message (MacInnis and Jaworski, 1989). As a result, cognitive and emotional responses leading to attitude formation cannot be generated. The results of this research demonstrate that players do not process game placements, probably because their attention and cognitive capacity is dedicated to fulfilling game playing tasks. Players therefore lack the motivation, opportunity and ability to process messages; their primary need is to play and win the game, so this focus serves as a distraction and leaves insufficient resources available for processing. The findings and their discussion, presented in Chapters 3 and 4, support this conclusion. It is suggested that constraints are imposed by the game medium, the playing experience, and the nature of placement messages.

5.2.2 The Unique Nature of Games
There are two key characteristics that distinguish games from other media used for marketing communications. First, games are a vivid medium, offering rich and animated imagery. They are high in both breadth (games activate a number of sensory channels simultaneously) and depth (each sensory channel is strongly influenced) (Steuer, 1992). Games are also interactive, allowing for associated active control and two-way communication. Interactivity provides marketers the means to not only deliver virtual realities for target groups of consumers, but that can be custom designed by them (Pennington, 2001). In other words, players can impact the game and co-create its content, as well as their own experiences (Gee, 2004). They therefore have the ability to act out different scenarios and receive different experiences each time they play (Frasca, 2003).
Li, Daugherty and Biocca (2002) suggest interactivity and vividness can have a cognitive impact, stronger than that which can be achieved in traditional media. This is because the characteristics of computer-mediated environments can increase cognitive involvement, or the extent of cognitive elaboration that occurs in a communication process (Batra and Ray, 1985; Liu and Shrum, 2002). This may lead to higher satisfaction (Dellaert and Kahn, 1999; Judge, Bono and Locke, 2000) and enhanced learning (Mitchell et al., 1994; Zimmerman, 2000). It has also been suggested that these characteristics will facilitate information processing (Liu and Shrum, 2002), because they encourage involvement, and therefore affect attention and comprehension effort. This has been suggested to be the greatest benefit games provide as a marketing medium (see, for example, Kane, 2004).

It is argued that one of the key advantages of placing brands and products into entertainment media is that watching these is a high attention and involving activity (d’Astous and Chartier, 2000). While watching television, two-thirds of the time people are doing something else (Clancey, 1994), so there is not a continuously high level of audience attention. Advertisers must therefore take steps to try and attract attention to their ads through a stimulating product and advertising execution strategies that encourage message involvement. A game, however, possesses unique medium characteristics that engage players. This engagement may be so strong that an individual experiences presence (Schubert, Friedmann and Regenbrecht, 2001) and enters a flow state (Hoffman and Novak, 1996). Players themselves report that games are absorbing and offer the ability to remove them from the immediate environment (Molesworth, 2006). Such a level of engagement, however, may not necessarily result in positive attitudinal outcomes (Coyle and Thorson, 2001).

The findings of the current research suggest the characteristics of a game stimulus may facilitate involvement, but in the game play itself, not product placement messages. When only involvement in the ad execution is high, however, attitude change may not occur (MacKenzie and Lutz, 1989), consistent with the results. This is because when an individual’s attention is divided, it can interfere with response outcomes (Liu and Shrum, 2002, 2005). Involvement in the game play (facilitated by interactivity and vividness) may therefore adversely affect processing. Some support for this is found in the product placement literature.
Nelson, Yaros and Keum’s (2006) results suggest that the level of involvement in a game can influence the effectiveness of placements, with detrimental effects on brand recall shown for players (who are more involved in a game than observers). Chaney, Lin and Chaney (2004) also attribute the low recall scores in their study to the fact that players were engrossed in the game, not the peripheral brand messages they tested. Finally, presence and flow (outcomes of involvement) have been found to positively affect attitudes toward a game (Bambauer, 2006; Nelson, Yaros and Keum, 2006), but negatively affect brand recall, recognition and preference for placements (Grigorovici and Constantin, 2004).

Immersion, absorption and engagement are considered key for game effectiveness (Sweetser and Wyeth, 2005). Current literature on usability and user experience presents many heuristics for game design and evaluation to achieve these outcomes (in terms of interface design, mechanics and gameplay), and which point to why it is unlikely players will be able to process placements. It has been recommended that games should: be detailed to capture and maintain a user’s attention (Pagulayan et al., 2003); progressively increase a player’s workload (Lazzaro and Keeker, 2004); gradually increase in difficulty to be challenging (Desurvire, Caplan and Toth, 2004; Juul, 2004); minimise distractions from major game tasks; and maximise the amount of screen taken up with game action (Johnson and Wiles, 2003). In order to facilitate immersion in the environment, they should also: offer mastery of the interface and control system (Adams, 2005); actively involve players with different options so they can shape the environment (Gee, 2004); make the interface invisible (Federoff, 2002); and use audio and narrative that will draw players in (Sweetser and Johnson, 2004). As a result, the gaming environment represents a demanding context for message processing, where a player’s cognitive capacity is likely to be limited (Chaney, Lin and Chaney, 2004; Nelson, Yaros and Keum, 2006).

Game involvement may also have implications for the potential of an individual’s attitude towards product placement to influence brand attitudes. A second key claim made in the literature is that product placement in games offers great promise as a promotional strategy, because consumers are receptive to the message (Nelson, 2002). Attitudes toward product placements (both in games and in traditional media) have been found to be positive (discussed in Chapter 2). This is significant, since
empirical studies in the advertising literature have found that attitude towards an ad can act as a mediator of advertising effects on brand attitudes (Batra and Ray, 1986a; Cacioppo and Petty, 1985; Lutz, MacKenzie and Belch, 1983; MacKenzie, Lutz and Belch, 1986; Mitchell, 1986; Mitchell and Olson, 1981; Moore and Hutchinson, 1983; Park and Young, 1986; Shimp, 1981). This was not assessed in the current study, but the findings offer insights in this area.

Lutz et al. developed a typology of ad-based persuasion processes, which holds that attitude towards an ad can influence brand attitudes, depending on whether involvement in the message and ad execution is high or low (Lutz, 1985; Lutz, MacKenzie and Belch, 1983; MacKenzie and Lutz, 1989). If both conditions are low, only affect transfer may occur (as observed in this study with interactivity, discussed in section 4.5.5). When an individual has high motivation to evaluate the message, but low motivation to evaluate the ad execution, message-based persuasion occurs (similar to the central route of persuasion). Under these conditions, an individual therefore is unlikely to possess attitudes towards the ad, or if they do, these are unlikely to have a determinant effect on brand attitudes. When an individual is motivated to evaluate the message and the execution, a dual mode of persuasion occurs, resulting in brand cognitions and message-based persuasion, which in turn affects brand attitudes.

The preceding discussion suggests that when involvement is strong, simultaneous brand and ad evaluations may occur. Olson and Thjømøe (2003) demonstrated that with increased involvement (and the increased processing capacity this brings), additional brand information can be processed, resulting in greater attitude change. It can also lead to enhanced and stronger levels of brand attribute perception and brand commitment (Zaichkowsky 1985).

The results of the current study would seem to indicate that gamers are involved in the game, and therefore do not possess the motivation to process either the product placement message or its execution. They appear incapable of attending to, and processing, placement information as a result of insufficient cognitive processing capacity, therefore the findings indicate simultaneous ad and brand evaluations would not occur. In such an instance, individuals are unlikely to possess attitudes
towards an ad, but even if they do, these are unlikely to influence brand attitudes (MacKenzie and Lutz, 1989).

Furthermore, even if gamers were involved in the execution of a product placement message owing to their involvement in the game (and thereby processed the message context), brand attitudes would still be unlikely to be affected. In this instance, an individual’s attitude towards an advertiser can mediate attitude towards the ad if the individual identifies the ad sponsor (MacKenzie and Lutz, 1989). In other words, a gamer would not need to encode the sponsorship of a placement, but merely note it is an ‘ad’ in order for their attitude towards it to be affected. This, however, may not occur, given the covert nature of product placement (discussed at section 5.2.4). Given this condition, attitudes towards the ad are unlikely to exist, thereby eliminating any potential for brand attitudes to be affected via this means. The findings of the current study suggest the relationship between attitude towards an ad and brand attitude is therefore unlikely to be upheld in the context of game placements.

5.2.3 The Game Playing Experience
Aside from the characteristics of games, the nature of game playing may be a further reason as to why product placement does not influence attitudes. The successful use of a computer system is not a product of the design specifications, but rather of the interaction between a human user and the system (Siekpe and Hernandez, 2006). Certainly system characteristics work to determine the psychological experience of the user, as in the case of interactivity and vividness which determine presence (Steuer, 1992), but it is necessary to consider the game playing experience independently.

People play games to escape reality, engage in competition, relieve boredom, ease stress and overall to have fun (Youn and Lee, 2003). Enjoyment is at the heart of game playing and serves as a key motivator for the activity. To be enjoyable, Sweetser and Wyeth (2005) contend a game must require a user’s concentration; it should be challenging and test a player’s skills; provide players a sense of control; present clear goals and feedback; involve/immerse players; and support, as well as create, opportunities for social interaction.
Empirical studies have shown that affective reactions to a promotional stimulus depend on the context of exposure (Bennett, 1999; Franzen, 1994). In regards to sponsorship at sporting events, for example, message impact can be affected by the emotional circumstances in which promotional images are observed (Bennett, 1999; Nebenzahl and Hornik, 1985). Likewise in the case of a game, the transmission of marketing communications will be affected by the exciting and highly involving nature of playing. Despite claims that the arousing nature of games presents an opportunity for brands and products in the game medium (see, for example, Kap, 2004), very high levels of arousal can limit information processing (Newell, Henderson and Wu, 2001). Audiences can find it difficult to process brief advertisements in intense situations, because their ability to think about messages is inhibited (Wright, 1981). This may occur when playing a game, not only because there is noise in the surrounding environment at the time of exposure (such as that created by the game action and presence of other people), but also due to the strong moods and emotions induced. With such high arousal, a player may be distracted, and their learning of a placement message impeded.

For this reason, it is suggested that the current study found interactivity to have only a weak influence on attitude to the placed brand and corporate image, and indeed why some facets had no influence. The only positive effect that interactivity had for placements was through the responsiveness of the game, the speed of this response and overall interactivity. It is suggested that strong arousal generated as a result of these factors transferred to the placements and positively influenced brand evaluations, but that this arousal prevented placement processing. The effects observed for interactivity are therefore the result, not of brand information processing, but the emotional responses generated by the interactive condition. Although this is a positive outcome, facilitating processing is an advertiser’s goal, because it leads to much stronger and lasting effects. This represents an area for future research, as discussed later at section 5.7.

5.2.4 The Unique Nature of Product Placement
One final explanation as to why attitudinal effects were not demonstrated in this study may be related to the characteristics of product placement. Product placement messages are processed differently from other types of communications, such as
advertising (Grigorovici and Constantin, 2004), because of a number of distinguishing features.

First, product placement messages differ from ads in that they do not contain a substantial amount of brand information (Russell, 1998). They are embedded into media content and are of secondary importance to it, even if they add meaning and value to the story (Balasubramanian, Karrh and Patwardhan, 2006). Second, placements are made to appear non-commercial, thereby blurring the line between entertainment and advertising from a consumer’s perspective. They are covert in nature and may not be recognised as ‘ads’. Last, product placement messages are designed to persuade unobtrusively. Unlike advertising, which is seen as a coercive activity (Meenaghan, 2001), placements are much more subtle. These characteristics are fundamental to the product placement definition (presented in Chapter 2) and are suggested to offer unique benefits over other forms of promotion (discussed in Chapter 1). However, it is the very nature of placements which may prevent an individual from attending to them, and processing brand information.

In a game context, the findings of this research point to the fact that players are already distracted as a result of their focus on the game play and other situational circumstances. However, the fact that placements are subtle means they do not have the ability to stand out and divert attention. Even where the placement may be more prominent, as in the case of its use simulation, it is still of secondary importance to the unfolding play. Further, placements may not be recognised as a commercial message, suitable for processing, because they are designed to be unobtrusive. Overall, these characteristics make placements particularly difficult to process. This, coupled with the fact that they appear in what is a difficult media environment, means they are unable to influence attitudes.

### 5.2.5 Summary

Cognitive processing is largely affected by stimulus, individual, and situational factors (Mitchell, 1983). An individual’s level of motivation, ability and/or opportunity to evaluate an ad/brand is therefore dependent on the ad, the individual and the viewing context. It is apparent that in a game context, conditions presented with regards to all of these factors limit the processing of placements and hence
prevent their attitudinal influence. The nature of the games medium, the game playing experience and placements, means the processing of brand information is difficult for gamers and unlikely to occur.

The perceived strength of product placement in games as a communications strategy is, first, the capacity of games to engender high levels of engagement facilitated by the medium’s characteristics; second, their potential to offer a highly arousing condition for the transmission of messages; and finally, the ability of product placement to deliver subtle messages that will not attract criticism. It is these features that distinguish the strategy from other marketing techniques and that the practitioner literature claims offer the most promise, in terms of the ability to influence target audiences (see Chapter 1). However, the findings of this research indicate that it is these very elements that prevent a cognitive impact in terms of attitudinal effects. Essentially, the interactive nature of games engages consumers, but in the game play: a resource intensive activity that requires cognitive attention and physical involvement. Although brands are embedded into the medium in which players are engaged, the skills, concentration and control required in this mediated environment divert attention from, and limit the cognitive capacity available for, message processing. Further constraints are imposed by the arousal generated from playing and due to the nature of product placement itself, which serves to only limit the potential for processing activities.

5.3 Contribution of the Research
The current research has addressed recent developments in marketing practice, specifically in the area of marketing communications, and has addressed an area that is practical and significant in both the academic and business domains. It builds on and expands existing paradigms and conceptual work, while at the same time making a contribution to marketing practice where the findings are managerially relevant. To do this, information has been drawn from the related disciplines of marketing communications and consumer behaviour, with inclusion of not only academic literature, but trade literature as well.
The findings of the research make a valuable contribution to the understanding of product placement in games, specifically in terms of its ability to facilitate attitudinal responses. Contributions have been made in a number of specific areas, as summarised below.

5.3.1 Performance of Relevant Research to Address a Current Need

The literature highlights one key criticism of academic research in marketing is that often it does not adequately support practicing marketers, and addresses research areas of little relevancy to them (Baker and Erdogan, 2000). While it is assumed that research-based marketing knowledge is of practical use for marketing managers and other practitioners, it is often not widely used by those in the field for reasons of relevancy (Gronhaug and Haukedal, 1997; Lee, Acito and Day, 1987; Ottesen and Gronhaug, 2004; Slocum, 1997). The purpose of academic research has been debated (see, for example, Grey, 2001; Starkey and Madan, 2001), but strong support for relevancy has been demonstrated. It has been argued that rigorous research conducted on pertinent topics is an important issue facing marketing theory, and is vital for the future development and status of the marketing discipline (Baker and Erdogan, 2000; Katsikeas, Robson and Hulbert, 2004; Sivakumar, 2001). Academics have been urged to become more attentive to changes taking place in marketing and its wider contexts (Goldsmith, 2004b).

This research is relevant to current marketing practice and addresses a significant market need for information. Chapters 1 and 2 of this thesis highlighted the growing use of product placement in games, despite an absence of information (including academic research) to validate the strategy. To address this, the current research provides explanation, prediction and understanding of the effects of product placement in video games and advergames, which can help guide decisions concerning marketing communications. Specifically, it provides evidence on which to base decisions pertaining to the use of the strategy for the purpose of influencing brand attitudes and corporate image. It also makes available at Appendices 2 and 4 the first survey instruments to measure these constructs in a game context.
5.3.2 Evidence of the Effects of Brand and Product Placements in Games on Players’ and Observers’ Brand Attitudes and Corporate Image

The current study is the first to investigate the attitudinal responses of gamers to brand and product placements in both a video game and advergame context. Specifically, the focus of this research is on console-based games (those played on television sets and handheld devices), as opposed to online or computer games. This is the first study of a handheld console, but the fourth investigation of product placement in console video games overall (empirical studies have been conducted by Bambauer, 2006; Nelson, 2002; and Schneider and Cornwell, 2005). Also, this is the first study to test the effects of placements in a console advergame. Brand-centred game environments have largely been ignored to date, aside from three studies of online advergames (see, Hernandez, Suh and Minor, 2005; Mallinckrodt and Mizerski, 2007; Winkler and Buckner, 2006). The current research comparatively tests placements in these environments. It is only the second study in the video game product placement domain to explore brand attitudes (with the other being that of Bambauer, 2006) and the first to test corporate image.

Considering the fact that this is a relatively new area, it is inappropriate to claim the findings of the current research provide conclusive evidence of product placement’s effects, because there is still much that remains unknown. Validation of the findings in different contexts is therefore necessary. The fact, however, that only one of the five hypotheses developed for this research was partially supported, and that the two experiments produced consistent results, means strong empirical evidence is presented, as to the inability of the strategy to satisfy brand attitude and corporate image objectives. The results indicate that placements in the game medium have no influence on these constructs, thereby exploding myths surrounding the strategy. Games have been hailed the most powerful marketing medium ever created (Nelson, 2002), with much speculation in the literature concerning the unprecedented opportunity they offer to marketers to produce beneficial consumer outcomes (see Chapter 1). The findings of this investigation challenge these assumptions and demand a re-evaluation of video game product placement’s role in promotional strategy.
The research makes additional contributions as a result of the specific elements investigated. First, the study investigates real brands placed in real games played by real gamers, thereby making the findings both relevant and of practical use. The research maintains a level of realism since the games investigated are based on a true sport, motor racing. The findings are therefore of direct relevance to this industry, its current sponsors and vehicle manufacturers.

Rather than investigating the effects of placements on game players in isolation, the effects on observers were tested in the pilot study, plus the effects on players of their presence were assessed in the field study. The research therefore takes into consideration one factor contributing to the complexity of the game playing experience. Most placement studies conducted to date have focused on the ‘individual’ as the unit of analysis for exposure, processing and outcomes (Balasubramanian, Karrh and Patwardhan, 2006), ignoring the potential impact of shared viewing experiences. The current study (both the pilot study and field research) have recognised that game play is commonly a shared social experience that often involves other people. The research design allowed for the role of coviewing behaviours in shaping placement outcomes to be taken into account.

The influence on attitudinal responses of gamer product category involvement and a player’s skill level was also considered, as were the effects of interactivity. Other studies have investigated user responses to medium characteristics such as flow and presence (see, for example, Bambauer, 2006; Grigorovici and Constantin, 2004), but the current research is the first to test the complex interactivity construct.

Finally, the study builds on the work of Russell (1998) concerning the dimensions of product placement to investigate two distinct types in a game context. It therefore contributes to the understanding of video game product placement itself, in addition to its effects. Expanding on Russell’s classification of visual and plot integrated placements, the current study pioneers the terms peripheral and use simulated placements to more accurately capture the true nature of messages in the game medium (see Figure 2.2). These two placements are quite distinct, with a brand featured in the background representing a peripheral placement and a product used in the game representing a use simulated placement. These two types were examined
independently in the pilot investigation, with their combined effects then tested in
the main study. This addresses a gap in the literature concerning the effects of more
integrated forms of product placements (where brands are directly linked to the
media content), as recognised by Sheehan and Guo (2005). Information concerning
how these placements appear is presented in section 4.3.2.1. This is the most
detailed analysis available in the literature, which provides the foundation for future
content analyses.

5.3.3 Contribution to Theories Pertaining to Product Placement, Attitudes
and Memory
As part of the current investigation, a number of concepts have been explored,
thereby allowing for contributions to be made in several separate areas aside from
the broader theme of product placement in games. This includes contributions to
both the marketing communications and consumer behaviour literature.

First, the current study makes a contribution in the product placement domain, where
there exists an absence of work and inconclusive evidence of product placement’s
effects. A series of investigations, outlined in section 2.5.1, have explored the
influence of this form of promotion on brand memory, which remains the most
common measure of product placement effectiveness. The majority of these
academic studies have employed memory-based tests to measure recall and
recognition of placements in traditional media, many of which have produced
insignificant effects (see, for example, Babin and Carder, 1996a; d’Astous and
Chartier, 2000; Johnstone and Dodd, 2000; Karrh, 1994; Ong, 2004; Ong and Meri,
1994; Tiwsakul, Hackley and Szmigin, 2005). Attitude measures have largely been
ignored, with the exception of studies performed by Babin and Carder (1996a),
Baker and Crawford (1996), Russell (2002), Russell and Stern (2006), Sheehan and
Guo (2005), Vollmers (1995), Vollmers and Mizerski (1994), and Weaver and
Oliver (2000). Corporate image has also been neglected, though Van Reijmersdal,
Neijens and Smit (2007) recently studied brand image. The current investigation
therefore fills a gap in the literature pertaining to product placement’s influence on
attitudinal responses. It also contributes to earlier work concerning brand recall,
demonstrating gamers can recall placed brands.
The research enhances understanding of the relationship between brand memory and attitudes. Investigations of product placement in movies and television programs have failed to find a correlation between these constructs, with a number of studies demonstrating that although a brand may be recalled, attitudes towards it will not necessarily be changed (see, for example, Babin and Carder, 1996a; Baker and Crawford, 1996; Russell, 2002; Vollmers, 1995; and Vollmers and Mizerski, 1994). In support of other game studies, which have found players can recall and recognise placed brands (see, for example, Chaney, Lin and Chaney, 2004; Grigorovici and Constantin, 2004; Hernandez, Suh and Minor, 2005; Nelson, 2002; Nelson, Yaros and Keum, 2006; Schneider and Cornwell, 2005; Yang et al., 2006; Winkler and Buckner, 2006), the current research demonstrates positive recall outcomes, but indicates attitudes will not be affected. This suggests a contentious relationship between the two constructs even in a game context. A warning is therefore provided to marketing practitioners seeking to evaluate the strategy, but who are presented with measurements of effectiveness based solely on brand recall.

Finally, this research extends work concerning attitude formation and enhances understanding of two important consumer responses to marketing communications, namely attitude to the brand and to the manufacturer (corporate image). There is an abundance of theories in the consumer behaviour discipline that have been used to describe, understand and predict the attitudinal responses of consumers to promotional messages. The current study has managed to adequately capture the complexity of the attitude construct and the myriad of factors which can influence attitude formation. It has done so through the application of MacInnis and Jaworski’s (1989) Integrative Attitude Formation Model (presented diagrammatically at Figure 2.5). This is significant, as few studies have sought to examine consumer processing of placements in games (a notable exception is Nelson, Yaros and Keum, 2006). The current study builds on the contribution of the aforementioned academics and lends support to the model, while at the same time incorporating and extending the work of other researchers in the area.

### 5.3.4 Development of a Product Placement Definition

As part of the current study, a new definition of product placement has been developed to address the limitations associated with existing definitions available in
the literature. Few definitions of product placement are available and where they do exist, they fail to capture the complexity of the strategy.

Traditionally, product placement has been described as a form of advertising or promotion where, in return for payment, products are injected into television programs and movies (see, for example, Belch and Belch, 2001). This does not accurately reflect the true conditions by which product placement occurs and all its associated parameters. To address the need for a new definition, as argued in Chapter 2, the following was developed:

Product placement is a form of marketing communication, which may or may not be paid for, where messages about goods, services, brands, organisations, people and ideas are embedded into content such as film, television programs, newspapers, novels, music, and games in such a way that the sponsor/brand is identified but the message appears non-commercial, with information presented visually, verbally, integrated with a plot and/or available for use for the purpose of influencing audiences unobtrusively.

5.3.5 Positioning of Product Placement in Games Within the Existing Marketing Communications Framework

The complexity of product placement, particularly in a game context, means the strategy cannot be neatly categorised within the existing marketing communications framework. Although it is often positioned under the advertising banner (see, for example, Belch and Belch, 2001; Shimp, 2000), this classification is problematic, as argued in Chapter 2. This study recognises that no single promotional mix element accurately captures the true nature of the strategy.

The current thesis recognises the similarities between product placement in games and other promotional forms (namely advertising, interactive marketing and sponsorship), and provides a structured comparison for enhanced understanding of this new form of promotion. As the first study to do so, it makes a significant theoretical contribution and provides a context for exploring how video game product placement may influence consumer behaviour.
The current study has also recognised the evolution of product placement to now take on new meaning in the form of brand-centred entertainment. Chapter 1 presents information with regards to how advertainment should be classified and how it too differs from other forms of marketing communications. This provides a context for further discussion and development of the marketing communications discipline, which is in line with current marketing practice.

5.3.6 Contribution Concerning the Characteristics of Games as a New Marketing Medium and to Knowledge Concerning Interactive Environments

The role of interactive technologies in shaping consumer behaviour has been recognised as an important research area, due to its important place in contemporary marketing practice (Katsikeas, Robson and Hulbert, 2004). The current research has provided insights into one such interactive environment, which is increasingly being used as a vehicle for marketing messages: electronic games. The study has provided understanding however, not just of consumer behaviour effects in terms of attitudinal response, but also of the games medium itself.

Games have begun to be exploited as a medium for marketing communications, but this has taken place in the absence of an understanding of this complex world. The current study has provided valuable insights into the game medium and its various characteristics. This is significant since it appears that these characteristics may prevent product placement messages from producing strong, positive attitude effects.

First, the thesis presents an overview at section 2.6.2 of the characteristics that differentiate games from traditional media (namely interactivity and vividness), and the associated user responses they facilitate (direct experience, presence, flow and immersion). This is the first investigation to recognise all of the aforementioned dimensions in a game. Second, while internet marketing investigations have explored these concepts, they remain largely untested in a game context. Notable exceptions include Bambauer’s (2006) study of the influence of flow and Grigorovici and Constantin’s (2004) investigation of the effects of presence/engagement. However, the current study provides insights into the medium attribute of interactivity and its influence in a console game environment for the first time. It
also makes available a modified and tested scale for perceived interactivity (originally developed by Johnson, Bruner and Kumar, 2006) that can be applied in a game context. The facets of particular relevance have been identified.

The current study contributes new knowledge to the games literature, potentially offers insights for other game platforms, and provides a structured framework for comparison of games with different media types. This provides a foundation for further exploration of game medium characteristics as part of future research.

5.3.7 Review of the Games Industry and Activities in the Marketplace
To provide a context for the research and to make it more relevant for practicing marketing managers, this thesis also makes available a review of the video games industry. Information pertaining to the industry, games manufacturers, video games, and players is presented in Chapter 1. That analysis facilitates understanding of market dynamics and trends attracting marketers to the game medium. Schilling (2003) and Williams (2002) appear to be the only other academic authors who have presented such a review, but even their analyses do not capture trends taking place in marketing practice, as presented in Chapters 1 and 2 of the current thesis. Schilling (2003) presents a commentary concerning the introduction and diffusion of technologies, using the games industry as an example, while Williams’ (2002) focus is primarily on the structure and competition in the home video game industry. Likewise, even though industry reports and other practitioner papers are available, often they are incomplete, addressing only several core issues at the one time. The literature currently available, therefore, fails to capture all the elements discussed as part of the current research. This is notable, since such information is important for the development of sound business strategy (Aaker, 1998).

5.3.8 Methodological Contributions
Although the current study is relevant, as is often the case in academic research, a trade off was made in terms of relevance to gain improvements in research process and methods. This was necessary in order to adhere to the principles of scientific research, to ensure the research was methodologically sound, and to produce rigorous results. One limitation, which is recognised in section 5.6, is that the research suffers from a lack of external validity, so caution in generalising the results
is recommended. Steps were taken to address this weakness through the performance of a field experiment in study two, but control still needed be exercised over a number of variables to ensure internal validity was achieved. Nevertheless, the method employed addresses many limitations of prior research.

As discussed in section 2.6.1, most product placement studies performed to date have employed laboratory experiments and used small, non-random samples. The current research addresses these limitations in research design and sample selection. First, the use of a field experiment in addition to a pilot laboratory test represents a contribution and departure from other studies, which have investigated the effects of placements in games only in contrived settings. Observation was also employed to help explain the findings, thereby offering an additional contribution (a summary of the observational data appears at Appendix 7). Using this as part of the field study means insights have been gained concerning how players interact with games in a real-world environment, which in turn has facilitated a more complete understanding as to why video game product placement has no effect.

With regards to the sample, random samples of 60 and 350 respondents were drawn for the pilot and field studies respectively. As a result, this is the largest study of product placement in games available in the literature, and one of the largest in the product placement domain overall. Further, it fills a gap not only by empirically testing consumer responses to product placement in games, but by investigating these effects in the context of male and female adults. The limited number of investigations concerning game effects have tended to focus on children (a discussion of these studies exploring such factors as violence, social development and learning were presented in section 1.3.5). Also, in the product placement arena, most studies have tended to focus on males (discussed in Chapter 2). Finally, the selection of an Australian audience represents a further departure, since most product placement investigations to date have been performed in the United States.

The detailed methodological procedures discussed in Chapters 3 and 4 make a contribution for future investigations. The complexity of product placement in games makes testing difficult, but the methods associated with the current research
provide direction for future studies, and an opportunity for replication and improvement.

5.3.9 Identification of Future Research Opportunities
Later in this chapter, an extensive discussion is presented concerning opportunities for future research in the area of product placement in games. This represents yet another contribution of the thesis. As a relatively new research area, there are many options available for future investigations, but the discussion presents a structure and basis for their execution.

5.4 Implications for Theory
As addressed in the previous section, the findings of the current study make a significant contribution to the literature concerning product placement in games. This is the first study to explore consumer responses to brand and product placements in a video game and advergame context, and only the second study to investigate attitudinal responses specifically. It is the first study to investigate both recall and attitudinal outcomes combined. The research therefore provides understanding of this promotional form and offers a new perspective to challenge existing assumptions concerning its effects. Contrary to claims made in the literature, the findings indicate this strategy has no influence on gamers’ attitude to a placed brand or corporate image of a brand manufacturer.

The current research contributes new knowledge to two parent disciplines. First, in the marketing communications domain, the study makes a contribution to the product placement literature, through the provision of an enhanced understanding of the strategy’s influence on brand attitudes, corporate image and brand recall; the development of a new product placement definition; enhanced understanding of product placement’s dimensions; positioning of the strategy within the existing marketing communications framework; and comparison of the strategy with other promotional forms. This investigation therefore fills a gap not only in the literature concerning product placement in games specifically, but to product placement overall, where there has been a lack of academic work. This makes the current investigation significant on another level.
Second, the investigation makes a contribution to the consumer behaviour discipline, where it has implications for theory pertaining to attitude formation. The study contributes to the body of literature concerning brand attitudes and corporate image, and lends support to claims concerning the weak relationship between attitudes and awareness. It has applied an integrative framework developed by MacInnis and Jaworski (1989) to describe, understand and predict attitudinal responses in the current study, and in doing so, validates the model as well as surrounding academic theories and empirical work.

Finally, the study also contributes to the literature concerning interactive media. Valuable insights have been provided into the game medium and its various characteristics, thereby offering new theory, which can be tested in future studies. In particular, this research tests the medium characteristic of interactivity and offers a scale for this construct that can be refined in future investigations. The outcome is the presentation of evidence that interactivity may limit the potential for cognitive processing of placement messages. It is theorised that the very characteristics which distinguish games from other media, and that have been speculated to offer the most promise for marketing communications, may limit the potential for the achievement of attitudinal objectives.

5.5 Implications for Practitioners
Marketing practitioners are being challenged to find more effective methods of retaining visibility in what has become a crowded media environment (Ha and Litman, 1997; Sandler and Secunda, 1993). The effectiveness of traditional forms of marketing communications such as advertising is being questioned (Anderson, 2004; Rust and Oliver, 1994), raising the profile of new forms of promotion. Product placement in games has emerged in response, surrounded by speculation concerning its effects on consumers and positive outcomes for marketers. Although a growing form of entertainment for an increasingly diverse audience, electronic games are a new medium, about which there is a fundamental lack of understanding. Similarly in the case of product placement, there is still much marketers do not know about its effects. While industry developments are encouraging the use of games as a vehicle for placement messages, marketers have a lack of information to use as a basis for
sound strategy decisions, making the current research of utmost practical significance.

Often, two primary objectives for businesses pursuing a product placement in games strategy are to positively influence brand attitudes and corporate image (Avery and Ferraro, 2000). The findings of the current study demonstrate, however, that placements in video games and advergames have no effect on attitude to the brand or image of the brand manufacturer, suggesting this is an ineffective strategy for firms seeking to satisfy such aims. These objectives appear unattainable as a result of the characteristics of the game medium and the nature of the playing experience, which constrain the cognitive ability of gamers to process placement messages to the extent required for attitude formation. Interactivity though appears to produce positive outcomes as a result of its ability to arouse gamers, whereby the emotions generated transfer to placements and lead to more favourable evaluations. The cognitive processing necessary for attitude formation (MacInnis and Jaworski, 1989), however, is still seemingly precluded as a result of the interactive condition.

It is too early to draw definitive conclusions and suggest that product placement in games has no impact. Although the current research presents strong evidence that challenges existing assumptions, the results are contrary to Bambauer’s (2006) study. His investigation of regular game players showed that placements can positively influence attitude toward the brand. This research however did not provide evidence of processing activity, but rather, demonstrated that positive evaluations of a placement and game are conditions for attitude change. Like in the case of the current research, these effects may therefore be the result of excitation transfer. Further, the fact that the processing of placements may be difficult is not to say they go unnoticed. It is necessary to discuss the findings of the current research in conjunction with those of other studies to understand the broader implications of the strategy for marketers.

It has been demonstrated that gamers do notice product placements in games, thereby allowing them to recall brands (Chaney, Lin and Chaney, 2004; Grigorovici and Constantin, 2004; Hernandez, Suh and Minor, 2005; Kuhn, Pope and Voges, 2007; Molesworth, 2006; Nelson, 2002; Nelson, Yaros and Keum, 2006; Schneider
and Cornwell, 2005; Winkler and Buckner, 2006). Raising brand awareness is another key objective for firms that engage in the strategy (Avery and Ferraro, 2000). Most of the aforementioned studies however are exploratory in nature, using only small non-random samples of self-selected gamers, who have reported brand recall after exposure to a game in a contrived setting. As such, these respondents may have had a greater propensity to recall placements, due to their familiarity with the medium and their heightened awareness of the existence of placements through the use of laboratory experiments. Although studies of product placement in television and film have produced similar results, the current investigation suggests recall effects may not necessarily be evident for all gamers.

Brand awareness is a function of the attention a viewer pays to an advertisement (Aaker, 1996), but the current study suggests that in a game context, the attention gamers devote to placements is constrained as a result of stimulus, individual and situational factors. This may mean that positive recall effects will not be observed for all gamers, because the nature of the medium may prevent some consumers from noticing placed brands. The results of the pilot study are indicative, because although gamers were shown to recall placements, this seemed more problematic for players, who recalled fewer brands than observers. There is also the risk that due to the involving nature of games, any effects on brand memory may not be particularly strong or enduring. This is not to say that brand awareness cannot be affected, but that this construct may be more complex than has been assumed to be the case. Finally, even if game placements are recalled, it does not mean attitudes towards the brands will be influenced. This has been observed in the context of placements in traditional media as presented in section 2.5.2, and is reinforced by the current study.

The previous discussion indicates that using brand recall as a measure of product placement effectiveness is problematic, but it is a commonly used tool. It is in fact the number one metric being developed by game publisher Activision and Nielsen Entertainment, as part of their initiative to create a ratings system for games (Delaney, 2004). They have released evidence that product placement positively influences brand awareness (see, for example, Games Press, 2005) and have incorporated ad-tracking technology into console games to capture data for developing costing information (Delaney and Guth, 2004). Marketing practitioners
should exercise caution in using this system as the sole basis for their product placement decisions. They are well advised to explore additional measures of effectiveness, particularly if seeking to influence attitudinal responses. Marketers must also make game publishers accountable, asking them to demonstrate proof of marketing outcomes in order to justify the increased cost of placements. The new ratings system is expected to formalise the relationship between game makers and marketers, and increase not only the number of paid placement deals, but also their monetary value (Delaney, 2004; Hein, 2004). Finally, marketers must be far more targeted in their activities, as not all gamers will necessarily be influenced. Emerging research data concerning game use and player demographics from Nielsen’s tracking studies and GamePlay Metrics will play an important role in this regard.

The current research has implications for not only advertisers, but for a number of other parties involved in, and affected by, product placement in games. First, for advertisers, the findings have direct relevance to vehicle manufacturers, who are heavy users of product placement (Devanathan et al., 2003; Fawcett, 1993; Ferraro and Avery, 2000; Galician and Bourdeau, 2004; Hume, 1990; La Ferle and Edwards, 2006; Sapolsky and Kinney, 1994). The findings are particularly relevant for GM Holden and Ford Motor Company. For games publishers, advertising agencies and ratings services, the findings suggest a shift required in the way these groups think about product placement in games and promote the strategy to advertisers. These participants are taking steps to attract marketers as discussed in Chapter 1, but at the risk of misleading them, further work is required to justify the strategy and develop more rigorous measures for gauging effectiveness based on sound research. Third, the findings have implications for parents, advocacy groups and public policy officials who have expressed concerns regarding the influence of placements in games (presented in Chapter 2). Finally, the findings also pose an opportunity for other media organisations seeking to compete more effectively with this new form of promotion and increase confidence in traditional forms of communication.

Based on existing information, marketing practitioners are cautioned that serious consideration should be given to other promotional tools when seeking to influence brand attitudes and/ or improve their corporate image. It must be recognised,
however, that this is the first and only study investigating these effects in the context of video games and advergames. As such, the research does possess limitations, which are discussed in the following section, so performing additional research in the context of a specific organisation, brand and game has merit. Additional research to assess brand memory outcomes, particularly using longer-term measures, is also warranted. Even when seeking to influence brand awareness, the use of a game medium may not be the most viable alternative, so it suggested marketers evaluate their options. Whether information is sought from game makers, or independent research conducted, what has been reinforced by this study is that assumptions concerning positive effects should not form the basis for action.

5.6 Limitations

Despite its many contributions, there are a number of limitations associated with the current research, the most significant of which relates to a lack of external validity. Generalising the findings to real world applications is therefore difficult, as a result of limitations pertaining to the experimental design, nature of the stimuli and sample selection.

The first limitation relates to the experimental design employed. A true experimental design was selected for this research, specifically a post-test-only, control group design. In the case of the pilot study, this was performed in an artificial setting. A laboratory setting was justified as it satisfied the requirements for high internal validity and allowed separation of the cause and effect (Wells, 1993), but its selection meant a reduction in external validity. This is a major criticism of non-field experiments (Babbie, 2004; Christensen, 1997). Steps were taken to create an environment as realistic as possible for exposure to the stimulus and to reduce the risk of reactive error, but responses may be reflective of the contrived environment. A real lounge room, or even a simulated lounge room, may have produced different results.

Issues pertaining to external validity were the key factors that prompted the use of a field experiment for study two, but even in this context, control was exercised over a number of variables, as discussed in section 4.3.2. The presence of the researcher
was required to achieve a level of experimental control and therefore internal validity, thus creating an ‘unnatural’ condition. This was also necessary so that observations from the field could be recorded, a key contribution of the research. To reduce the risk of social desirability response bias, self-administered surveys were used, respondents remained anonymous, and the researcher stood away from participants both during game play and survey completion. Steps were taken to respect the nature of ‘normal’ game play, but the results cannot be generalised to every game playing situation, setting (such as in the home), or the larger population of gamers, including different sub-groups (hard core gamers for example).

In both studies, a post-test-only, three group design was used in preference to a pre-test/ post-test design. This allowed for the true purpose of the research to be disguised from respondents, it reduced the risk of demand artifacts, and prevented the testing procedures from adversely affecting internal validity. The disadvantage of this method, however, was that it did not allow for measurement of pre-existing attitudes or corporate image in the minds of respondents prior to execution of the experiments. This therefore represents another limitation of the research. A pre-test measure would have been useful to more accurately gauge any level of change in responses to the stimuli. The absence of this measure however is not a major weakness, due to the inclusion of control groups, which allowed for change in responses to the stimuli to be measured by comparing responses between the groups. Although the control group was not exposed to a game stimulus, the inclusion of a placebo brand allowed for any potential game effects to be identified.

A related issue is that the level of prior knowledge of the brands was also not directly assessed. A pre-test measure would have facilitated performance of this task, but was not used for reasons discussed above. Brand selection decisions took this issue into consideration, whereby familiar brands were included for investigation. Careful selection of the products that were a focus in the study also minimised the threat of statistical issues.

Due to the nature of the research design, there may also be limitations associated with the post-treatment measurement. Every effort was made to replicate the game-playing experience, but duration of exposure to the game stimuli was controlled in
both experiments. In the case of the pilot study, participants had to complete one lap of the circuit in the car game and then watch a replay of their race. The average time for exposure was nine and a half minutes. In the main study, respondents played for a maximum of five minutes. Brand attitude and corporate image were then measured immediately following exposure. While the current research addresses many of the method-based limitations of other product placement studies (lack of control groups, small non-random samples, laboratory settings), a key weakness is its single-exposure design, consistent with other investigations conducted to date (for a notable exception see Russell, 2002).

In essence, attitudinal effects were tested after just one game playing session. An important variable however in the effect of persuasive messages is repetition (Krugman, 1972; Van Osselaer and Janiszewski, 2001). It has been demonstrated that repeated exposure to an object can lead to increased positive affect toward that object (Harmon-Jones and Allen, 2001; Zajonc, 1968, 2001). However, even though exposure time was relatively short in the current studies, repetition was achieved to an extent, as respondents were exposed to a single racetrack several times, thereby receiving multiple brand exposures. Skill level was included as a covariate to control for differences in terms of the types of placements, the number of placements and the length of exposure time across the studies and respondents. In Van Reijmersdal, Neijens and Smit’s (2007) study, effects on brand image occurred after just two or more exposures to product placements. Greater repetition however may be needed, to establish a strong association between the brands and the game in order to influence attitudes. Repetition of the stimulus and therefore repeat exposure to the brands over a longer period may produce different attitude and image effects to those observed in this research.

The nature of the stimulus itself also poses potential limitations. This research focused on only one video game and three specific brands in the pilot study, with two games (video game and advergame) and two brands then investigated in the main study. Using pre-existing stimuli is not recognised as a weakness, but it is difficult to generalise the findings to other game genres and brands used for product placement. In advertising and media planning, it has been suggested that program context influences promotional impact (Murray, Lastovicka and Singh, 1992).
Indeed, game context may also influence the impact of placements. Replication of the study is therefore necessary.

Within the games, the circuit, driver and vehicle (including its view on the track) were preselected by the researcher. The reasons for these various decisions are justified in sections 3.3.2.1 and 4.3.2.1, but they have a corresponding impact on the research, causing it to suffer from a lack of external validity. Also, although respondents were asked not to change any of the game settings, it is possible that some of them may have done so by accident, such as in the case of the on-screen display of the vehicles. They may have also used other functions in the game, such as the handbrake or rear view mirror. Such activities potentially pose a threat to internal validity, though this is minimal.

Further, the scope of the study dictated the use of a console as the platform, with a television console and handheld used in the pilot and main studies respectively. This limits the generalisability of the findings to other game types such as arcade, online and computer games. The brands of consoles selected may have also caused some bias in responses, particularly in the case of the PSP handheld, which is a relatively new game system. Many respondents commented on the PSP and were excited to be playing it, with some asking about its functionality and price. This however does not pose a great problem, as the results showed no effects of product placement. The findings are consistent with the pilot study, which used a different game platform that was hidden from respondents.

The ability to generalise the findings to the overall population may also be limited by the sample selection. For both studies, respondents were drawn from the population of an Australian east coast university using simple random sampling. Samples drawn using this technique may not always be representative of the larger population (Malhotra et al., 2004). Systematic, stratified or cluster sampling may have increased representativeness. Further, the samples consisted of adults aged 17 to 55 years, which fills a gap in the literature where the impact of playing games has been focused on children (discussed in Chapter 1). The samples however were drawn from only two campuses at one institution. Staff, students and other members of the university community were included, but other types of gamers may respond
differently to product placement, such as those from other universities, children, avid gamers and perhaps those loyal to placed brands. Finally, there are limitations due to the relatively small sample size of the control and treatment groups in the pilot study. Some minor effects therefore may not have been detected. This was addressed with a larger sample in the main study, but the fact that Levene’s test was violated in three of the analyses points to the need for an even greater sample size.

Weaknesses have also been identified with regards to two survey items. First, the item which questioned players about their experience with playing games generally probably needed to be more specific for racing games. Respondents indicated that gamers tend to have preferences for certain genres and platforms. Further, the item designed to measure overall interactivity was identified as inadequate to capture the complexity of this game characteristic. The 17-item scale, which was a focus in the analysis, was found to be far superior. Aside from these items, it is unlikely significant limitations exist in relation to the survey instrument, since existing scales were used and their Cronbach’s alpha scores were above acceptable limits. The guidelines offered in the literature for successful survey design were also adhered to. There is the possibility, however, that there may have been an error of central tendency, since 7-point Likert-type scales were used throughout the survey.

One final limitation is recognised by the fact that the focus of the current research is on product placement specifically and its attitudinal effects. Often however product placement is used as part of an integrated campaign, whereby other forms of marketing communication may be used to promote or support the placement. For example, a firm may use advertising to promote the game in which its brand appears, or may use other forms of communication to tie-in and hence provide support. The current study does not consider the total effects of such a campaign on attitudinal response. The greatest value may come from such integration, which is a key focus of marketing communications overall (Belch and Belch, 2001). This represents a future research opportunity, as discussed in the following section.

In summary, the current research represents just one study. The results therefore need to replicated across other stimuli and other populations before they can be fully integrated into marketing theory. The following section presents ideas as to how this
can be done, and how the limitations of the current study can be addressed as part of future research.

5.7 Ideas for Future Research

Although the current research makes a significant contribution to knowledge surrounding product placement in games, future studies that build on its findings and address its limitations is recommended. As a new research area, there are many questions that remain unanswered, which poses significant opportunities for further exploration.

The key limitation of the current research relates to a lack of external validity, which is a consequence of the experimental control imposed. Although this was more relaxed in the field study, internal validity still needed to be achieved; it was paramount since the current research is one of the first investigations of the effects of product placement in games. A number of elements were therefore controlled, which has implications for the generalisability of the findings.

First, subjects were randomly selected and assigned to groups, thereby removing the choice they would normally have to select their fellow gamers (e.g., friends or family), role (player versus observer) and game (advergame or video game). Subjects participated in the research by fulfilling a request, and played a game at their university campus. Participation occurred at a time convenient for the researcher and lasted for a limited duration (the time for exposure to the stimuli was restricted). Further, aspects of the stimuli such as the circuit, driver and vehicle (including its view on the track) were pre-selected by the researcher and the option to use gadgets, such as steering wheels and pedals, was not provided. The platforms, games and brands were also pre-determined. Overall, subjects were not provided the same freedom they would have under more realistic conditions. A strong argument therefore exists for the performance of a pure field experiment as part of future investigations. Observing game play under natural conditions, perhaps in consumers’ homes, could produce different findings to those of the current studies.
A related limitation that should be addressed as part of future research pertains to the experimental method. The current research is a cross-sectional study, which employed a post-test-only research design. As such, brand attitudes and corporate image were measured immediately following respondents’ exposure to a game stimulus. This strengthened the internal validity of the experiment, as discussed in sections 3.3.1 and 4.3.1, but failure to include a pre-test means the influence of existing attitudes towards the vehicle brands, organisations and games could not be examined. It is possible that such attitudes may influence the effects for product placement. Certainly in the sponsorship domain, studies have shown that corporate image is impacted by the image of an event (d’Astous and Bitz, 1995; Gwinner and Eaton, 1999; Meenaghan, 2001) and of a sponsor before the sponsorship (Javalgi et al., 1994). Further, future studies should examine the potential influence of simply playing a game on attitudinal response, by including control groups which are exposed to a game stimulus.

Replication of the research using longer-term measures would also be beneficial. McCarty (2004) highlights this as an important research area. Much of the extant work conducted to date (including the current study) is focused on the short-term effects of exposure to product placement in games, but future studies which explore the effects after extended play, may yield different results. This would more accurately reflect the true conditions by which gamers are exposed to placements, and allow for the structural aspects of games and their influence to be taken into account. A key weakness of existing studies is that they do not capture the complexity of the experience and fail to acknowledge that an individual can play a game for hours, weeks or even months, as they progress through multiple levels. The use of longitudinal research designs would be useful in this regard and may facilitate an enhanced understanding of the potential for product placement to impact consumer responses.

The current study adopted the view that attitudinal effects for game placements could be demonstrated as a result of mere exposure (one exposure to a game), in accordance with other findings in the literature (see, for example, Gatewood, Gowan and Lautenschlager, 1993). This however has been disputed (see, for example, Herbig and Milewicz, 1993). A longitudinal study would allow repeated exposure
and collection of information from the same group of respondents, to determine whether attitudes can be affected via other means, such as in the case of classical conditioning (see, for example, Gorn, 1982; Stuart, Shimp and Engel, 1987). Repetition and reinforcement of an association between a game or pleasing scene and a placement, may elicit a reaction over time. This would occur if gamers are aware of the brands (MacInnis and Jaworski, 1989; Staats and Staats, 1958), which players report is more likely after an extended period (Kuhn, Pope and Voges, 2007; Nelson, Keum and Yaros, 2004).

Differences in brand information processing levels over time and the corresponding effect on attitude formation could also be tested. Repeat exposure to a single track as well as to a game itself (and thereby multiple tracks) may see a player’s skills improve, thereby freeing up cognitive resources for placement processing. Moore (2006) implies that attitudinal effects may not be evident, as games are designed to challenge players in progressing to the next stage, which may detract from brand messages. Different manipulations however could be tested with a longitudinal experimental framework. The roles of subjects within and across different game play sessions could also be alternated from player to observer, in order to more accurately reflect the shared gaming experience. Although the pilot study found no significant difference between players and observers in terms of attitudinal effects, gamers have reported they are more likely to notice brands when spectating (Nelson, Keum and Yaros, 2004).

A longitudinal study would allow not only for the determination of whether brand attitudes and corporate image are affected with repeat exposure, but also whether there are any risks associated with over-exposure and the potential for message wear-out or player irritation. Initial repetitions can enhance familiarity with and liking for a stimulus, generating positive thoughts and increased attention, but once learning has occurred, the message can cease to be meaningful (Bennett, 1999). Further repetition can result in tedium, decreased recall and liking, and more negative thoughts (Bennett, 1999; Nordhielm, 2002). Repetition in the face of repetitions by similar competitors has also been found to create confusion for consumers (Law, 2002) and raise their resistance to persuasion attempts, in accordance with the persuasion knowledge model (Friestad and Wright, 1994; Hirschman and Thompson,
It would be useful to investigate whether such consequences arise in a game context.

Further research is also required to investigate the effects of product placement in games on brand awareness and other consumer behaviour constructs. Product placement is designed to be non-intrusive, so whether all gamers are aware of placements is uncertain. The current study could be replicated, but with the incorporation of additional questions to assess brand recall outcomes, which would allow for direct evaluation of the relationship between brand memory and attitudes in a game environment. The relationship between awareness and purchase intention/behaviour is also worthy of examination.

Pavlou and Stewart (2000) make a noteworthy point concerning the nature of interactive media and the need to employ alternate measures for gauging effectiveness. Measures of consumer response such as recall, attitude change and brand choice offer limited insights into what consumers do to, and with, interactive advertising. Future research should therefore explore how consumers interact with placements, not simply how they respond to them. This is appropriate since the placements which appear are shaped by consumer preferences. In this regard, there are limitations posed by the current research, as the various decisions concerning game selection and brand use were made by the researcher.

Gould and Gupta (2006, p78) theorise that product placement effectiveness is ‘intertextually embedded in meaning, discourse and reflexivity’. Hence it is only through these that attitudinal change can take place. It is possible that the responses generated from product placement may be context-specific, therefore it is difficult to generalise the findings of the current research to other game genres and brands used for product placement. Limitations relating to the stimulus should be addressed and the study replicated using different games, brands and placement types.

First, in relation to the game, it would be beneficial to replicate this research using different car racing games as well as other sports games, based on both true and fictional events. It would also be useful to investigate video games and advergames from different genres other than sport. Such studies would allow for comparison
with the current findings and determination of whether different game types produce different responses to product placement. Investigations of those with varying levels of intensity and that produce particularly strong emotions could also prove interesting. For example, there has been much speculation concerning violent video games, such as *Grand Theft Auto* (discussed in Chapter 1), and their power to influence consumers. A question is raised as to the effects on brand and product placements featured in such an environment. For *Grand Theft Auto*, concerns regarding the potential for negative outcomes have been so strong, that this has prompted the inclusion of vehicles, which are only representations of real-life models such as Lamborghini, Porche and Corvette. Validation of these concerns would be beneficial.

A further opportunity is presented to study different game platforms. The current study focused on console systems, specifically an in-home console and a handheld. It potentially offers insights for other platforms, but direct assessment of product placement in these games is warranted, such as those played in arcades, online, or on computers. Many console games can now be played on computers and online (the current generation systems offer online functionality). An opportunity therefore exists to replicate the current study using the computer and online versions of the *V8 Supercars* and *Ford Racing* games, to determine any difference in attitudinal responses. Online advergames also warrant attention, as they may present a different set of conditions to their console-based counterparts, due to the fact they are far more simplistic. It is possible that, contrary to the great benefits technological advancements are proclaimed to have on marketing potential, more simplistic games could offer more. There is still much research required with regards to game design and how this may impact on various aspects of consumer behaviour.

Studies comparing product placement for offline and online gaming will make an important contribution. Online games represent a whole new domain worthy of investigation. The characteristics of this environment and the types of games featured are vastly different to those explored as part of the current research. From simplistic stand-alone games, to those that are part of elaborate online communities, there are many possibilities for study. To extend the current research, work should begin in the area of online communities, where a game represents just one activity
for an integrated campaign in a virtual brand environment. Take for example the case of *millsberry.com*, where visitors can use money earned playing to purchase General Mills cereal, or watch ads at the theatre (Moore, 2006). *Second Life* is perhaps the most sophisticated example, which allows consumers to escape their everyday lives and inhabit a new reality where their alter-egos can function (Brandweek, 2006; for a complete discussion see, Dower, 2007). To date, the influence on consumer behaviour of brands in these communities has not been explored. Related to this is the viral appeal of such games. The availability of blogs and newsgroups offers a rich data source and the opportunity for new methodological approaches to explore online games and their impact.

Investigations using different game platforms would also facilitate a greater understanding of the mechanics of games (in terms of their interactivity and vividness, as well as the outcomes of direct experience, presence, flow, engagement and immersion). Research to validate these characteristics and their impact on consumer responses to brands in the medium is necessary. Aside from the current study which explored interactivity, Bambauer (2006) who studied flow, and Grigorovici and Constantin (2004) as well as Nelson, Yaros and Keum (2006) who studied presence, the mediating effects of game characteristics on player responses have not been studied. Research that investigates the influence of specific constructs, such as increasing levels of presence, interactivity, flow and game involvement, will greatly enhance our understanding of the medium. The current study has shown that placements in games do not influence attitudes, but work must begin to understand at what point, if any, positive effects may be facilitated.

Interactivity constitutes a particularly pertinent mechanism for investigation. It was found to have an effect in the current study, though this was so small that it is likely to lack practical significance. The results suggest that the more interactive a game, the more likely attitude to the brand and corporate image will be affected. The influence however was so minor, that insufficient support is provided for marketers to invest in a product placement in games strategy. The current research provides a basis for the operationalisation of the interactivity construct in future studies, and a tested scale that can be modified and refined. Flow is perhaps the other construct that warrants particular attention, since Bambauer (2006) found it to have a positive
role in influencing attitudes towards placed brands. The existing literature presents different approaches for measuring flow, which could be used as a basis for this task (see, for example, Csikszentmihalyi and Csikszentmihalyi, 1988; Ghani and Deshpande, 1994; Privette, 1983; Privette and Bundrick, 1987; Trevino and Webster, 1992; Webster, Trevino and Ryan, 1993).

Future researchers are also advised to replicate the current study to test not only whether the results can be extended to other platforms, but also to different brands and product categories. Fast-moving consumer goods, for example, are often used for product placement and should be examined. Investigation of brands in the same product category would also be useful. Further, it is recommended that future studies assess different types of placements in a game context (illustrated in Figure 2.2). The current study focused on visual and plot connected placements (as defined by Russell, 2002, but redefined in this thesis as peripheral and use simulated for games). It did not investigate verbal brand placements, nor did it assess the effects generated when a visual placement is presented along with a verbal prompt (such as where a player is provided direction in the game). Also, the effects of a purely audio placement, such a game soundtrack, have not been determined.

Additional research is required to gauge the effectiveness of different product placement methods in games relating to sensory cues (visual versus auditory) and different types of cues (in the case of audio, music versus sound effects versus announcers). This would facilitate assessment of different brand contacts in a gaming environment, and their impact on consumer responses. Such an assessment may also include comparison of the effects for a brand character, versus a brand logo, versus the product itself, or its package. Further exploration of advergames will also help determine whether the absence of competing brands (exclusivity) has any effect. The two games investigated as part of the study exist on two opposing ends of the continuum: the advergame where there was exclusivity for the Ford brand, versus V8 Supercars where there were many brands featured. Attitudinal effects stemming from placements were not evident in either case, but understanding the optimal number of brands for any potential effects to be demonstrated will be an important consideration in future work.
Greater levels of brand and product exposure within a game may also generate different results to those of the current study. For example, games which allow for greater customisation of placed products (such as in the case of *Gran Turismo* where gamers can select performance parts for their vehicles) may have an impact on consumer responses. One potential limitation of this research relates to the fact that the type of vehicle was pre-selected for the experiments (to allow for investigation of specific product placements). Had gamers been allowed to select their own cars, they may have consciously considered brand alternatives, which in turn may have produced different findings. Also, as a consequence of selecting the type of vehicle, the vehicle driver was predetermined. Future studies should investigate whether selection of game heroes by the players themselves produces different attitudinal effects. This could represent a type of virtual endorsement for placed products, and thereby affect player opinions concerning brands, products and organisations, particularly if they feel a connection with the endorser.

Another factor that may limit the ability to generalise the findings of the current studies to the overall population relates to sample selection. This research should therefore be replicated, with the selection of larger samples of different sample elements using other techniques to increase representativeness. Investigations of the effects of product placement on children would make a particularly strong contribution to key issues such as public policy and ethics. Studies that investigate the effects on different types of game players should also be a priority. In the current research, examination of the variance within the experimental groups revealed that some people are polarised on their attitude to the brand. Identifying those game players who have the greatest propensity to respond to product placement would have implications for segmentation and targeting activities.

The current research investigated the influence of skill level on placement responses, which provided an indication of subjects’ familiarity with the games and game playing in general. The confounding potential of product involvement was also examined. It is predicted, however, that there are meaningful relationships between game, product placement message, and product/brand involvement that were not uncovered. The intentional selection of subjects with varying levels of involvement would allow for meaningful comparison and the identification of any differences in
processing and attitudinal responses. Connectedness is a different construct (Cohen, 1983) that also awaits empirical testing. Studies that examine a player’s relationship with a game and whether this extends into their social and personal life may prove interesting. For individuals who are not only highly involved, but who define themselves by the games they play (and hence are true fans), product placement may have an influential, but as yet undetected, effect. Such individuals are more likely to pay greater attention to every aspect of the game and may be more likely to process placements, particularly those who are motivated to process brands for self-presentational purposes (to express a desired image) (Balasubramanian, Karrh and Patwardhan, 2006). Research performed by Russell and colleagues of television program placements supports this, and would be useful in future investigations (see, for example, Russell, Norman and Heckler, 2004a,b; Russell and Puto, 1999; Russell and Stern, 2006).

In a similar vein, study of those players who actually purchase placed products may be a worthy pursuit. Placement agents, studio representatives, and corporate marketing executives believe current brand use is a key characteristic for effectiveness (Karrh, McKee and Pardun, 2003). Perhaps this is because placements in games serve a reinforcing function for real life brand choices and preferences, as indicated by respondents in the current study (see Appendix 7). The role of the player in selecting brands, choosing when and how to interact with them, and their goals and purposes, could therefore offer additional insights into how placements may work in a game context. Molesworth (2006) suggests games offer the potential for individuals to reflect on consumption through play, with in-game choices influenced by existing attitudes. It may be that players use brands in a game that are desirable in real life, or that they already own, to carry out activities not possible in reality (such as racing). Games and associated brand selection may therefore be used to build on, maintain, or experience dreams, and realise fantasies (Molesworth, 2006; Shapiro and McDonald, 1995). This in turn may affect external behaviour.

A final idea for sample operationalisation in future studies would be to more formally explore group dynamics. The pilot study investigated the responses of both game players and observers (separately and in conjunction), while the main study focused on players, but allowed the presence of observers. Often, however, games
are played in larger groups. Another area that requires research attention is therefore the possible group effects that could exist when playing games and their impact. This should include the impact of the group situation on moderating interactivity effects and the potential for flow. As part of this, there is an opportunity to study game playing culture, and its various sub-cultures such as multiplayer gaming, tournaments and battles.

A further recommendation for researchers is to more formally employ qualitative methods as part of future studies. The current research employed triangulation methods to understand why product placement in games has no effect, but it is one of the first studies to do so. Further work is required to gain insight into how placements in games are experienced. One suggestion would be to make use of trained observers for qualitative observation. More formal observational techniques, eyetracking measures and event recorders could also be employed to measure attention dedicated to placements. The use of video cameras may also be worthy to study the body language and reactions of gamers.

In future studies, product placement in games could also be explored in the context of an organisation’s other related promotional activities. The current studies explored the effects of product placement in isolation, without consideration of other promotional tie-ins with the games. This presents a research opportunity. Brand placement practitioners believe the most effective product placements have additional promotional support (Karrh, 1995). This raises a question as to whether product placement used in conjunction with other forms of promotion could influence attitudinal responses.

A related issue concerns the comparison of product placement outcomes with those to other forms of promotion, for example, by investigating the brands studied in this research in different contexts. For games, comparison with internet advertising and sponsorship would be most appropriate, since the internet possesses similar characteristics and game placements often mimic sponsorship (the billboards in a sports game, for example, may be the same as those at a true event). Comparative studies (see, for example, Singh, Balasubramanian and Chakraborty, 2000) to examine these techniques in terms of their effects on attitudes and image would aid
marketing practitioners in deciding between promotional alternatives. Similarly, studies investigating identical placements embedded in different genres, media types and media vehicles would prove useful. For example, Ford could be examined in different game genres (a car racing game versus an adventure game), media types (online game, console game, movie, television program) and media vehicles (car racing games Gran Turismo versus Need for Speed Underground).

Finally, the current research provides a basis for future investigations to explore other specific attitudinal theories and concepts, and alternate means for attitude formation. One area, in particular, worthy of further exploration is the affect generated by game play and its ability to influence attitudinal responses. Some authors contend that product placement triggers mainly affective processes (see, for example, Russell, 1998), so the study of emotions is a worthy pursuit. Considering the findings of the current research point to the potential for excitation transfer, this is especially important.

The current studies and ideas presented here for future research provide a framework to guide investigations of consumer reactions to product placement in games. This represents a relatively new research area, which makes the possibilities for future study almost endless. In summary, further research is required to explore the conditions by which product placement in games might or might not be effective, and to understand if and how an audience may process the information communicated. This research indicates that placements are simply not processed, thereby eliminating any potential for attitudinal impact, but there is the risk context-specific factors produced the results. Future research, which manipulates the conditions for placement presentation and examines the effects of varying circumstances, is required. Suggestions have been provided to facilitate this task.

5.8 Conclusion

In conclusion, as an emerging area within the marketing discipline, product placement in games represents an important research topic. This is particularly the case in light of industry developments that are reshaping the marketing communications landscape. The current research has addressed a critical need for
information and has contributed new knowledge in an area, which has largely been neglected until this time.

The findings of the current research have important implications for both marketing practitioners and academics. Contrary to existing assumptions, the study has empirically demonstrated that brand and product placements in video games and advergames do not affect gamers’ brand attitudes or corporate image, regardless of their involvement in a placement’s product category or skill level. Where a player perceives a game to be interactive, however, a weak but positive influence on attitude to the brand and corporate image is possible. These results appear to be attributable to the characteristics of the game medium, the nature of the playing experience and the features of product placement, as argued earlier in this chapter.

Due acknowledgement must be given that this is but one study, the first in fact to investigate attitudinal responses to video game and advergame product placement. As such, there is still an insufficient foundation on which to draw definitive conclusions concerning the overall value of the strategy. A critical need for further research into all aspects of gaming therefore exists, but the current study provides direction for future academic work.
6.0 APPENDICES
# APPENDIX 1: Original Scales Adapted for the Survey Instrument

## Brand Quality (Keller and Aaker, 1992)

<table>
<thead>
<tr>
<th>Low quality 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>High quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all likely to try 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very likely to try</td>
</tr>
<tr>
<td>Inferior product 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Superior product</td>
</tr>
</tbody>
</table>

## Corporate Image (Javalgi et al., 1994; Pope and Voges, 1999)

Subject brand:

<table>
<thead>
<tr>
<th>Has good products/services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is well managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Only wants to make money*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is involved in the community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responds to consumer needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is a good company to work for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree 1</td>
</tr>
</tbody>
</table>

* This item is removed in Pope and Voges’ (1999) modified scale
Product Involvement (Srinivasan and Ratchford, 1991)

I have an interest in cars

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I am fascinated by cars

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I have a compulsive need to know about cars

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I am crazy about cars

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I like auto races

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I like to engage in conversation about cars

- Strongly disagree 1 2 3 4 5 6 7 Strongly agree
APPENDIX 2: Survey Instrument - Pilot Study

Appendix 2a: Control Group Questionnaire
Appendix 2b: Treatment Group 1 - Player Questionnaire
Appendix 2c: Treatment Group 2 - Observer Questionnaire
Appendix 2d: All Groups - Questionnaire Cover Letter
Appendix 2a: Control Group Questionnaire
**Questionnaire C**

**PART 1:**
Please indicate your opinion on the following statements.

1. The Holden car company has good products.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

2. The Holden car company is well managed.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

3. The Holden car company is involved in the community.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

4. The Holden car company responds to consumer needs.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

5. The Holden car company is a good company to work for.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

6. The Holden car is of high quality.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

7. I would be very likely to try a Holden car.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

8. The Holden car is a superior product.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

9. I have an interest in cars.  
   *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

10. I am fascinated by cars.  
    *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

11. I have a compulsive need to know about cars.  
    *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

12. I am crazy about cars.  
    *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

13. I like car races.  
    *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*

14. I like to talk about cars.  
    *Strongly Disagree  1  2  3  4  5  6  7 Strongly Agree*
15. QANTAS has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

16. QANTAS is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

17. QANTAS is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

18. QANTAS responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. QANTAS is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. QANTAS service is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

21. I would be very likely to fly QANTAS.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

22. QANTAS flights are a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

23. COMPAQ has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

24. COMPAQ is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

25. COMPAQ is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

26. COMPAQ responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

27. COMPAQ is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

28. The COMPAQ product is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

29. I would be very likely to try a COMPAQ product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

30. The COMPAQ machine is a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
PART 2:
Please indicate your response.

31. What is your age?
   ___ years

32. What is your gender?
   1 [ ] Male  2 [ ] Female

Thank you very much for responding to this survey.
Your time and assistance is appreciated.
Appendix 2b: Treatment Group 1 - Player Questionnaire
Questionnaire P

PART 1:
Please indicate your opinion on the following statements.

1. The Holden car company has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. The Holden car company is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. The Holden car company is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. The Holden car company responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. The Holden car company is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. The Holden car is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. I would be very likely to try a Holden car.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. The Holden car is a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9. I have an interest in cars.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10. I am fascinated by cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

11. I have a compulsive need to know about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

12. I am crazy about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

13. I like car races.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

14. I like to talk about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
15. QANTAS has good products.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

16. QANTAS is well managed.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

17. QANTAS is involved in the community.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

18. QANTAS responds to consumer needs.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

19. QANTAS is a good company to work for.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

20. QANTAS service is of high quality.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

21. I would be very likely to fly QANTAS.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

22. QANTAS flights are a superior product
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

23. COMPAQ has good products.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

24. COMPAQ is well managed.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

25. COMPAQ is involved in the community.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

26. COMPAQ responds to consumer needs.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

27. COMPAQ is a good company to work for.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

28. The COMPAQ product is of high quality.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

29. I would be very likely to try a COMPAQ product.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

30. The COMPAQ machine is a superior product.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*

31. In this race I drove well.
   *Strongly Disagree* 1 2 3 4 5 6 7 *Strongly Agree*
Please list all the brands you can remember seeing in the game.

PART 2:
Please indicate your response.

32. What is your age?
   ___ years

33. What is your gender?
   1 □ Male      2 □ Female

Thank you very much for responding to this survey.
Your time and assistance is appreciated.
Appendix 2c: Treatment Group 2 - Observer Questionnaire
Questionnaire O

PART 1:
Please indicate your opinion on the following statements.

1. The Holden car company has good products.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

2. The Holden car company is well managed.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

3. The Holden car company is involved in the community.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

4. The Holden car company responds to consumer needs.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

5. The Holden car company is a good company to work for.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

6. The Holden car is of high quality.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

7. I would be very likely to try a Holden car.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

8. The Holden car is a superior product.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

9. I have an interest in cars.
   **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

10. I am fascinated by cars.
    **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

11. I have a compulsive need to know about cars.
    **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

12. I am crazy about cars.
    **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

13. I like car races.
    **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**

14. I like to talk about cars.
    **Strongly Disagree** 1 2 3 4 5 6 7 **Strongly Agree**
15. QANTAS has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

16. QANTAS is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

17. QANTAS is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

18. QANTAS responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. QANTAS is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. QANTAS service is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

21. I would be very likely to fly QANTAS.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

22. QANTAS flights are a superior product
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

23. COMPAQ has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

24. COMPAQ is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

25. COMPAQ is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

26. COMPAQ responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

27. COMPAQ is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

28. The COMPAQ product is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

29. I would be very likely to try a COMPAQ product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

30. The COMPAQ machine is a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

31. In this race the player drove well.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
Please list all the brands you can remember seeing in the game.

PART 2:
Please indicate your response.

32. What is your age?
   ___ years

33. What is your gender?
   1 □ Male  2 □ Female

Thank you very much for responding to this survey.
Your time and assistance is appreciated.
Appendix 2d: All Groups - Questionnaire Cover Letter
Brand Names in Video Games Research

QUESTIONNAIRE COVERSHEET

Dear respondent,

I would be grateful for your help with my research. This research project is entitled *Brand Names in Video Games*, and investigates the views of respondents regarding the Xbox V8 Supercars video game, and the brands contained within it. This research is being performed as part of a postgraduate study, being undertaken by Kerri Kuhn and supervised by Associate Professor Nigel Pope.

Your participation in this research will involve playing the V8 Supercars video game and/or completing a questionnaire. The questionnaire will be administered to you by the researcher, at which time you will be requested to complete and return it immediately in person.

The purpose of this study is to investigate the effect of brand placements in video games on game players. Your participation in this research will take approximately 20 minutes. All responses are confidential. The aggregated data and general insights gained in this study will be written-up in a research paper, however you will remain anonymous. Furthermore, once the report is written, the data you supply will be stored in a secure location for five years and then destroyed.

Your participation in this research is completely voluntary. Your decision regarding participation will in no way impact upon your relationship with Griffith University or the Department of Marketing. You are free to withdraw from the study at any time and you may skip questions contained in the questionnaire that you do not wish to answer.

Playing the video game and/or completing the questionnaire will be accepted as your agreement to take part in the research.

In return for your participation you will be entered into a draw to win a free movie ticket. Furthermore, I will be happy to supply you an executive summary of the research report when it is available. To take advantage of these opportunities please provide details of your email address in the register which will be shown to you by the researcher. I do not need your name in this register or on the questionnaire.

Please keep this letter for your future reference. If you have any concerns about the research, please contact us on 07 3875 7443. Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Research Involving Humans. If you have any concerns or complaints about the ethical conduct of the research, please contact: Manager, Research Ethics on 07 3875 5585 or research-ethics@griffith.edu.au.

Thank you very much for your assistance with this research project.

Sincerely,

Kerri Kuhn
Dear Miss Kuhn

I write further to the additional information provided in relation to the provisional approval granted to your application for ethical clearance for your project "Brand Names in Video Games Research" (GU Ref No: MKT/18/04/HREC).

The additional information was considered by Office for Research.

This is to confirm that this response has addressed the comments and concerns of the HREC.

Consequently, you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Gary Allen
Manager, Research Ethics
Office for Research
Bray Centre, Nathan Campus
Griffith University
ph: 3875 5585
fax: 3875 7994
email: g.allen@griffith.edu.au
web:
APPENDIX 4: Survey Instrument - Main Study

Appendix 4a: Control Group Questionnaire
Appendix 4b: Treatment Group 1 - Video Game Player Questionnaire
Appendix 4c: Treatment Group 2 - Advergame Player Questionnaire
Appendix 4d: All Groups - Questionnaire Cover Letter
Appendix 4e: All Groups - Competition Terms and Conditions Plus Entry Slip
Appendix 4a: Control Group Questionnaire
Questionnaire C

PART 1:
Please indicate your opinion on the following statements.

1. The Ford car company has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. The Ford car company is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. The Ford car company is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. The Ford car company responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. The Ford car company is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. The Ford car is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. I would be very likely to try a Ford car.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. The Ford car is a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9. I have an interest in cars.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10. I am fascinated by cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

11. I have a compulsive need to know about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

12. I am crazy about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

13. I like car races.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

14. I like to talk about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
15. COMPAQ has good products.
   [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

16. COMPAQ is well managed.
   [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

17. COMPAQ is involved in the community.
   [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

18. COMPAQ responds to consumer needs.
   [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

19. COMPAQ is a good company to work for.
   [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

20. COMPAQ product is of high quality.
    [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

21. I would be very likely to try a COMPAQ product.
    [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

22. The COMPAQ machine is a superior product.
    [Strongly Disagree] 1 2 3 4 5 6 7 [Strongly Agree]

PART 2:
Please indicate your response.

23. What is your age?
   ___ years

24. What is your gender?
   1 □ Male  2 □ Female

Thank you very much for responding to this survey.
Your time and assistance is appreciated.
Appendix 4b: Treatment Group 1 - Video Game Player Questionnaire
PART 1:
Please indicate your opinion on the following statements.

1. The Ford car company has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. The Ford car company is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. The Ford car company is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. The Ford car company responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. The Ford car company is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. The Ford car is of high quality.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. I would be very likely to try a Ford car.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. The Ford car is a superior product.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9. I have an interest in cars.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10. I am fascinated by cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

11. I have a compulsive need to know about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

12. I am crazy about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

13. I like car races.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

14. I like to talk about cars.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
15. COMPAQ has good products.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

16. COMPAQ is well managed.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

17. COMPAQ is involved in the community.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

18. COMPAQ responds to consumer needs.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

19. COMPAQ is a good company to work for.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

20. COMPAQ product is of high quality.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

21. I would be very likely to try a COMPAQ product.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

22. The COMPAQ machine is a superior product.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

23. In this race I drove well.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

24. I am a highly experienced game player generally.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

25. Every time I clicked on something the game responded.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

26. The game required me to perform a high number of actions.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

27. I participated in the interaction with the game to a large extent.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

28. I feel that the number of times the game responded to my commands was high.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

29. When I clicked on things in the game, the information shown was relevant.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree  

30. When I clicked on things in the game, the information shown was appropriate.  
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree
31. When I clicked on things in the game, the information I received was what I expected.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

32. When I clicked on things in the game, the information I received was suitable for the task at hand.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

33. When I clicked on things in the game, the information I received was useful.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

34. Pictures, icons, graphics, animation and colours were used in the game to a large extent.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

35. The game contained a lot of non-text information (i.e. pictures rather than words and numbers).

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

36. The game contained more graphics-type information (pictures, colours, animation, etc.) than text-type information (words and numbers).

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

37. Pictures and graphics were used to enhance my understanding of the brands in the game.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

38. The game responded quickly to my commands.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

39. Every time I clicked on something in the game, the game responded quickly.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

40. When I performed an action in the game, there was a delay in obtaining a response.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

41. My impression is that the game responded immediately to my actions.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

42. The game was interactive.

   Strongly Disagree   1   2   3   4   5   6   7  Strongly Agree

**PART 2:**
Please indicate your response.

43. What is your age?

   ___ years

44. What is your gender?

   □ Male   □ Female

*Thank you very much for responding to this survey.*
*Your time and assistance is appreciated.*
Appendix 4c: Treatment Group 2 - Advergame Player Questionnaire
Questionnaire A

PART 1:
Please indicate your opinion on the following statements.

1. The Ford car company has good products.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

2. The Ford car company is well managed.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

3. The Ford car company is involved in the community.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

4. The Ford car company responds to consumer needs.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

5. The Ford car company is a good company to work for.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

6. The Ford car is of high quality.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

7. I would be very likely to try a Ford car.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

8. The Ford car is a superior product.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

9. I have an interest in cars.
   Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

10. I am fascinated by cars.
    Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

11. I have a compulsive need to know about cars.
    Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

12. I am crazy about cars.
    Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

13. I like car races.
    Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree

14. I like to talk about cars.
    Strongly Disagree  1  2  3  4  5  6  7  Strongly Agree
15. COMPAQ has good products.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

16. COMPAQ is well managed.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

17. COMPAQ is involved in the community.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

18. COMPAQ responds to consumer needs.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. COMPAQ is a good company to work for.
   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. COMPAQ product is of high quality.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

21. I would be very likely to try a COMPAQ product.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

22. The COMPAQ machine is a superior product.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

23. In this race I drove well.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

24. I am a highly experienced game player generally.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

25. Every time I clicked on something the game responded.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

26. The game required me to perform a high number of actions.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

27. I participated in the interaction with the game to a large extent.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

28. I feel that the number of times the game responded to my commands was high.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

29. When I clicked on things in the game, the information shown was relevant.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

30. When I clicked on things in the game, the information shown was appropriate.
    Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
31. When I clicked on things in the game, the information I received was what I expected.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

32. When I clicked on things in the game, the information I received was suitable for the task at hand.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

33. When I clicked on things in the game, the information I received was useful.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

34. Pictures, icons, graphics, animation and colours were used in the game to a large extent.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

35. The game contained a lot of non-text information (i.e. pictures rather than words and numbers).
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

36. The game contained more graphics-type information (pictures, colours, animation, etc.) than text-type information (words and numbers).
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

37. Pictures and graphics were used to enhance my understanding of the brands in the game.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

38. The game responded quickly to my commands.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

39. Every time I clicked on something in the game, the game responded quickly.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

40. When I performed an action in the game, there was a delay in obtaining a response.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

41. My impression is that the game responded immediately to my actions.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

42. The game was interactive.
   \[
   \text{Strongly Disagree} \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad \text{Strongly Agree}
   \]

**PART 2:**
Please indicate your response.

43. What is your age?
   
   ____ years

44. What is your gender?
   
   □ Male   □ Female

*Thank you very much for responding to this survey.*
*Your time and assistance is appreciated.*
Dear respondent,

I would be grateful for your help with this research. The topic of the study is video games. The research is being performed as part of a Doctor of Philosophy, being undertaken by Kerri Kuhn and supervised by Associate Professor Nigel Pope.

Your participation in this research will take approximately 10-15 minutes and may involve playing a video game and/or completing a questionnaire.

Participating in the study and completing the questionnaire will be accepted as your agreement to take part in the research. Your participation however is completely voluntary. Your decision regarding participation will in no way impact upon your relationship with Griffith University or the Department of Marketing. Further, your decision will not impact on your relationship with the researcher, your grades or access to marketing services. You are free to withdraw from the study at any time and you may skip questions contained in the questionnaire that you do not wish to answer.

All responses are confidential. The aggregate data and general insights gained in this study will be incorporated into the researcher’s doctoral thesis. The intention is for this thesis to eventually be published in an academic journal, however you will remain anonymous. No personal details will be collected at any time. Furthermore, once the report is written, the data you supply will be stored in a secure location for five years and then destroyed.

In return for your participation, you will be entered into a draw to win a $100 JB Hi-Fi voucher which may be used to purchase any store items, including your own gaming equipment (please see attached for further details). You also have an opportunity to request an executive summary of the research report including the final results when available.

Please keep this letter for your future reference. If you have any concerns about the research, please contact me on 07 3735 3729. Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Research Involving Humans. If you have any concerns or complaints about the ethical conduct of the research, please contact: Manager, Research Ethics on 07 3735 5585 or research-ethics@griffith.edu.au.

Thank you very much for your assistance with this research project. It is greatly appreciated.

Sincerely,

Kerri Kuhn
Appendix 4e: All Groups - Competition Terms and Conditions
Plus Entry Slip
Terms and Conditions of Entry

1. When you enter the competition, you accept these terms and conditions of entry.
2. Employees of Griffith University ("the University") and their immediate families are ineligible to enter.
3. Entry into the competition is by:
   a. placing a completed original coupon into the competition box provided by the researcher.
4. The first random drawn entry will receive a $100 JB Hi-Fi gift voucher. This may be used to purchase any JB Hi-Fi store items up to the value of $100 at any of the JB Hi-Fi stores. This is valid for 12 months from the date of issue on the card.
5. The decision of the University is final and no correspondence will be entered into.
6. The prize is not transferable and cannot be redeemed for cash. The prize is not refundable.
7. The winner releases the University from any and all causes of action, losses, liability, damage, expense (including legal expenses) cost or charge suffered, sustained or in any way incurred by the winner as a result of any loss or damage to any physical property of the winner, or any injury to or death of any person arising out of, or related to or in any way connected with the University or the prize.
8. Any winner drawn for the prize who is unable to fulfil all of these terms and conditions will forfeit the prize and another winner will be drawn.
9. The winner will be notified via email at the completion of the study (expected to be around mid to late 2007).
10. The competition opens to entries at the commencement of the study and the competition closes at the end of the study, as notified by the researcher. The competition will be drawn at the completion of the study.
11. The prize will be available for collection by the winner at N50, room 2.41 at a time arranged with the researcher.

PRIZE DRAW

Name: __________________ Date: _______________

Email: _________________________________

☐ Yes, I would like to receive an executive summary of the results.

PRIZE DRAW

Name: __________________ Date: _______________

Email: _________________________________

☐ Yes, I would like to receive an executive summary of the results.
APPENDIX 5: Original Interactivity Scale Adapted for the Survey Instrument - Main Study

Perceived Interactivity (Johnson, Bruner and Kumar, 2006)

Facet 1: Reciprocity

Every time you clicked on a wine attribute, such as “Age of wine” or “Where the grapes were grown,” the Web site responded. You would look at the information and then perhaps click again on another attribute. These are exchanges that took place between you and the Web site. What is your impression of the number of exchanges you had with the Web pages for this task?

Very low 1 2 3 4 5 6 7 Very high

Did the Web page require you to perform a low or high number of actions?

Very low 1 2 3 4 5 6 7 Very high

To what extent did you participate in the interaction with the Web site?

Very low 1 2 3 4 5 6 7 Very high

Did you feel that the number of times the Web site responded to your commands was low or high?

Very low 1 2 3 4 5 6 7 Very high

Facet 2: Responsiveness

Please rate the relevance of the information you were shown when you clicked on the wine attributes as instructed.

Very low 1 2 3 4 5 6 7 Very high

Please rate the appropriateness of the information you were shown when you clicked on the wine attributes as instructed.

Very low 1 2 3 4 5 6 7 Very high

When you clicked on the wine attributes as instructed, you expected to get some information. Please rate the extent to which the information met your expectations.

Very low 1 2 3 4 5 6 7 Very high
How suitable was the information you received when you clicked on the wine attributes as instructed for the task at hand?

Very low 1 2 3 4 5 6 7 Very high

When you clicked on the wine attributes as instructed, you wanted to get some information that would be useful to you. Please rate the usefulness of the information you received.

Very low 1 2 3 4 5 6 7 Very high

Facet 3: Nonverbal

Many Web sites contain pictures, icons, graphics, animation, and colours to enhance your understanding of the material presented. Please rate the extent to which these features were used to describe the brands.

Very low 1 2 3 4 5 6 7 Very high

In your opinion, to what extent did the brand descriptions contain nontext information? “Nontext” refers to the use of anything other than words and numbers (e.g., pictures) to convey information.

Very low 1 2 3 4 5 6 7 Very high

Did you think the brand descriptions had more text-type information (words and numbers) or more graphics-type (pictures, colours, animation, etc.) information?

Very low 1 2 3 4 5 6 7 Very high

To what extent were pictures and graphics used to enhance your understanding of the brand descriptions?

Very low 1 2 3 4 5 6 7 Very high

Facet 4: Speed of Response

Please rate the speed with which the Web pages responded to your commands.

Very low 1 2 3 4 5 6 7 Very high

Every time you clicked on parts of the Web page, how quickly did the Web site respond?

Very low 1 2 3 4 5 6 7 Very high
When you performed an action on the Web page, what was your impression of how much delay there was in obtaining a response?

<table>
<thead>
<tr>
<th>Very low</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very high</th>
</tr>
</thead>
</table>

What was your impression of the immediacy with which the Web pages responded to your comments?

<table>
<thead>
<tr>
<th>Very low</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very high</th>
</tr>
</thead>
</table>
Dear Ms Kuhn

I write further to the additional information provided in relation to the conditional approval granted to your application for ethical clearance for your project "The Impact of Brand and Product Placements in Games on Consumer Attitude to the Brand and Corporate Image of the Brand Manufacturer" (GU Ref No: MKT/29/06/HREC).

This is to confirm receipt of the remaining required information, assurances or amendments to this protocol.

Consequently, I reconfirm my earlier advice that you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Gary Allen
Manager, Research Ethics
Office for Research
Bray Centre, Nathan Campus
Griffith University
ph: 3875 5585
fax: 3875 7994
email: g.allen@griffith.edu.au
web:
Dear Ms Kuhn

I write further to your application for a variation to your approved protocol "The Impact of Brand and Product Placements in Games on Consumer Attitude to the Brand and Corporate Image of the Brand Manufacturer" (GU Ref No: MKT/29/06/HREC). This request has been considered by the Office for Research.

The OR resolved to approve the requested variation:

Requested an extension of the ethical clearance from 01/07/2007 through until 01/09/2007.

This decision is subject to ratification at the next meeting of the HREC. However, you are authorised to immediately commence the revised project on this basis. I will only contact you again about this matter if the HREC raises any additional questions or comments about this variation.

Regards

Gary Allen
Manager, Research Ethics
Office for Research
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fax: 3875 7994
e-mail: g.allen@griffith.edu.au
web:
APPENDIX 7: Observational Data

1. Some players had friends present during the experiment. Student respondents often spoke with each other and laughed together. Game play appeared to be an enjoyable social activity with the potential to not only involve the player in the action, but also other observers. Some friends looked over the players’ shoulders to view the unfolding play, asking players how they were going and where they were coming in the race. Players generally responded, but rarely looked up from the screen.

2. Most respondents were so engrossed in the game and concentrated on the play that few looked around and spoke about other things. Even when friends were present and perhaps spoke about other matters, game players did not become involved in these conversations and actually scolded their friends in some instances e.g. “Will you be quiet! I’m trying to concentrate!”

3. Even in cases where nobody was present at the time of the experiment, often players spoke to the game itself.

4. Respondents appeared to become deeply involved in the game, even within the relatively short period of time spent playing. Where a player was winning a race, comments such as, “Yes, take that” were heard. Losing a race resulted in negative comments, even abuse directed at the game e.g. “You stupid thing!”

5. Many respondents spoke about the unfolding play, whether they were simply talking to themselves or others present. For example, players commented on the actions of other drivers on the circuit (e.g. “That car just smashed me! These drivers are aggressive”), as well as their own actions (e.g. “I’m doing a doughnut/ burn-out”). They also spoke about their vehicle, including its handling (e.g. “The handling is too sensitive”), speed (e.g. “This car is slow”) and condition (e.g. “My car doesn’t sound healthy”). Many observers expressed their own opinions on the game play and offered words of encouragement, as well as advice.
6. A key conversational point was with regards to the player’s driving ability and crashes experienced. Players mentioned the objects they were hitting in the game (such as power poles, walls) and the corresponding damage (e.g. “I don’t have a number plate anymore” and “My car door is open”). Game play appeared to be a challenging activity.

7. A common theme in the discussion was the difference between one’s driving in the game and in reality. For example, some players commented that the way they drove in the game was not a reflection of real life. One respondent stated to a friend, “Fourteen years experience driving and I’m having all these crashes.” The friend jokingly replied, “You’re not taking me home!”

8. Respondent comments indicate that playing a game is also a competitive activity. One player declared to another driver in the game, “I am going to kick your xxxx.” Respondents were conscious of their race position and number of opponents, providing regular updates on their progress e.g. “I’m now seventh out of twenty-one.”

9. The games appeared to be not only mentally engaging, but physically as well. Respondents were observed moving their bodies when playing, consistent with their steering in the race. Some even moved the handheld PSP like a steering wheel.

10. Respondents and other observers spoke about the types of games they play and like, both in terms of different genres (e.g. racing or action) and platforms (e.g. PC). They also mentioned the preferences of friends and family members e.g. “My son loves these racing games.” It was clear that respondents identified themselves and others as being a particular type of gamer e.g. “I’m a strategy man.”

11. Some respondents and their friends reminisced about past game play, sharing memories of previous game experiences e.g. “I remember the good old days of Donkey Kong” and “I used to love my Sega system.”
12. Respondents commented on the level of control using a PSP device and sound. They spoke about technology advances and the way games have evolved e.g. “The graphics today are great” and “Games are more expensive now!” Some respondents were clearly excited about the PSP system, asking about its functionality and price.

13. Respondents commented on the realism of the game they played. The advergame attracted some criticism, with players suggesting it lacked realism, excitement and difficulty. One respondent’s comment is indicative: “This game is not entertaining or realistic. I just drove through a power pole.” Generally, comments centred on the vehicle and its handling (e.g. “The vehicle handling in this game is not good. I just had a crash and my car isn’t even damaged”). These comments were particularly strong amongst more regular game users.

14. When asked to stop playing at the completion of the experiment, most respondents complained, stating that they were “having fun”.

15. Game playing seems to be an enjoyable activity that may be used to unwind and relax e.g. “Playing is a stress buster for me.”

16. The time allocated for game play appeared to be sufficient. Some respondents struggled initially to manage the controls and mentioned that they were not enjoying the game. After a couple of minutes, respondents settled in. This was confirmed by respondents who indicated that they were used to the game within one to two minutes.

17. Upon receiving the survey, which posed questions about a brand in the game, many respondents laughed and commented, “I was too busy playing. I didn’t notice anything.” One stated, “The game was going too quick for me to notice.” Many respondents asked for confirmation regarding the car they drove e.g. “I think it was a Ford I was driving. Was it?”
18. Following survey completion and debriefing with regards to the purpose of the research, some respondents offered their insights concerning potential effects of placements. One mentioned,

“A game that isn’t realistic wouldn’t have any effect. If it is more life-like, it would probably change your opinion. Where a game is life-like, you can respect and learn from it. For example, I learn from Gran Turismo about cars. But although it may change my attitude about different cars, it is questionable whether it would change my behaviour and make me buy it.”

Yet another respondent stated,

“I like Nissan, so having Nissan cars in a game is good. Using cars in the game helps promote them I guess, but it’s not that powerful. Either way, I like Nissan.”

19. Respondent comments also point to the fact that brand selection in a game may serve a reinforcing function for real life behaviour, brand preferences and usage. Players spoke about different types of cars available in the market and their corresponding attitudes. For example, one respondent commented, “I would have liked to pick my own car and customise it. I like Skylines so this is what I would have picked.”

20. In a game however, respondents may select not only those brands that they own, but perhaps also those they would like to purchase. In this sense, games may allow players to fulfil dreams, as indicated by one respondent who mentioned, “My friends choose cars (in racing games) they dream of owning, like Porche and Ferrari.”

Conclusions

Game play is a social activity, capable of bringing people together (points 1, 5). In spite of engaging in conversation however, players concentrate intently on game play (1, 2), so much so that they may not notice some elements in the environment, including brands (17). Players even speak to the game, at times demonstrating strong emotions evoked from the unfolding action (3, 4). While playing is inherently
enjoyable and potentially relaxing (14, 15), this may be dependent on ease of use (16). The majority of comments on the game action suggest players are invested in a challenging and competitive activity (5, 6, 8). It is evident that a parallel can be drawn between playing a game and reality, with players making reference to their abilities in the game vis-à-vis real life (7). They tend to treat the activity like a real situation (9), which may explain why realism is such an important attribute of the gaming environment (13, 18). There is some evidence of self-image with games (10) and a high level of engagement with the technology, which may be sustained over a long period of time (11, 12). Players may even learn from games and use them to maintain existing self-concepts or fulfil fantasies (18, 19, 20). Player comments indicate that brands featured in games may be unable to influence attitudes and behaviour (18), but they provide an environment where existing preferences can be reinforced (19, 20). This has important implications for marketing communications, suggesting that traditional forms of promotion may be necessary to establish a brand relationship, so that selection and usage can take place in a simulated environment.
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