Exploring Player Responses towards In-Game Advertising: The Impact of Interactivity

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Abstract

The chapter aims to give an elaborate introduction to in-game advertising. It starts by providing a definition of the practice, an overview of its benefits and drawbacks, and a review of the research that has been conducted on its effectiveness. Additionally, it presents the results of a case study investigating how players respond towards different types of advertisements that are integrated into a digital game, with a specific focus on the interactivity that they allow.

Introduction

Digital games are firmly ingrained in our culture. From the 1970s onwards, they have evolved into an extremely popular entertainment medium that is able to attract interest across genders, age groups and cultures. In 2015, the global games industry generated software revenues of just over $80 billion; numbers that are expected to rise even further, to $104 billion, by the end of 2018 (Juniper Research, 2015). Given this explosive growth, *in-game advertising* has emerged as a promising new advertising medium, sparking the interest of the advertising industry, game sector, and academic research. The aim of this chapter is twofold. First of all, it intends to give an *introduction to this practice of in-game advertising*: providing a definition, an overview of its benefits and drawbacks, and an outline of the (industry-commissioned and academic) research that has been conducted on its effectiveness. Second, it will bring together the gathered information and illustrate the potential impact of in-game advertising by drawing on a case study (Herrewijn, 2015). This case study was designed to investigate player responses towards different types of advertisements that are integrated into a digital game, with a focus on the *interactivity* they allow.

In-game advertising (IGA) concerns the incorporation of advertisements into the environment of a digital game, a practice similar to the integration of product placements in movies or television shows (Herrewijn & Poels, 2014). IGA can take a lot of different forms, ranging from *sponsorship* deals, to the use of *real-world analogs* (e.g. banner ads such as billboards and posters, radio spots, television commercials), *brand placements* (e.g. branded cars, clothing, food and drinks, buildings, accessories), *branded music and sounds* (e.g. the use of branded music, brand sound effects, the voices of licensed characters and sports commentators), *branded characters* (e.g. the use of mascots, celebrities), etcetera (for an elaborate overview, see Herrewijn & Poels, 2014). Some of these placements merely appear as part of the game's scenery, serving as passive background props, while other placements can

be meaningfully interacted with and constitute a major part of the player's gameplay (e.g. when the player has to actively use a brand in order to progress in the game) (Nelson, 2005; Skalski, Bracken & Buncher, 2010). For instance, a large percentage of sports games are produced from licensed properties. Sporting leagues such as the International Federation of Association Football license sports games yearly (i.e. the FIFA game series (Electronic Arts, 1993-2015)), and in these games, billboards for real products are placed around the sports stadium, the athletes' clothes are adorned with the logos of sponsors and the voices of well-known sports commentators are heard in the background. Moreover, in racing games such as the Need For Speed series (Electronic Arts, 1994-2015), there are not only billboards placed around the race tracks, players can further choose from, and race, with a large range of real-world cars (including cars from Audi, Alfa Romeo, BMW, Ford, Honda, Jaguar, Nissan, Porsche, Toyota, Volkswagen, etcetera).

It is important to note, however, that, unlike *advergames* (i.e. digital games that are specially made to promote a certain brand and thus act as de-facto ads in themselves), when IGA is incorporated in a digital game, the main purpose of the game remains the entertainment of the player and not the communication of the brand message (Herrewijn & Poels, 2014).

In-Game Advertising: Benefits and Drawbacks

From the early 2000s on, both the advertising industry and academia have been showing explicit and increasing interest in IGA, citing that digital games offer a wide variety of *opportunities and benefits* for the inclusion of advertisements.

For *advertisers*, the appeal of IGA lies first and foremost in the ability of digital games to reach an *ever growing, diverse audience*. Digital gaming has become one of the fastest growing and most popular forms of entertainment (Juniper Research, 2015). There is a global audience of over half a billion people playing digital games, and best-selling games such as World of Warcraft (Blizzard Entertainment, 2004), Call of Duty: Modern Warfare 3

(Activision, 2011) and Grand Theft Auto V (Rockstar Games, 2013) have been among the highest revenue-generating entertainment products ever. Moreover, games have surpassed their status as being a pastime for adolescent boys, and have grown into a mainstream medium that touches every segment of the population. According to the Entertainment Software Association (2015), 42 percent of U.S. citizens play digital games on a regular basis (three hours or more per week), 44 percent of all game players are women, and the average game player is 35 years old and has been playing games for 13 years.

Additionally, digital games are potentially interesting vehicles for the integration of advertising because they possess several *unique characteristics* that can give them advantages over other advertising media (e.g. print, radio, television, movies, the Internet) (Chambers, 2005; Nelson, 2002). First of all, digital games have the benefit of a *long shelf-life* and *high replay value*. Games typically take between 10 and 200 hours to complete, meaning that the chance of repeated and extensive exposure to integrated advertising is considerably high (Internet Advertising Bureau, 2007).

Additionally, where other media are often suffering from a lack of focused attention, games continue to demand *more concentration* (Internet Advertising Bureau, 2007). External stimuli can distract people from paying complete attention to medium content. People are often multi-tasking, eating, reading, talking, or doing household tasks while also consuming content of multiple media at the same time. For instance it is possible, and not uncommon, for people to watch television while also catching up with their family members, eating dinner, checking their e-mail, and/or surfing the Internet on their laptop or mobile device. Gaming, however, is different. It is a medium where if the audience is not focused, there will be consequences for their progress in-game. In the majority of cases, if people are not concentrating while playing a game, there is a good chance that their performance will suffer, resulting in lower game scores and maybe even the death of their game character (Internet Advertising Bureau, 2007).

Further, it is *more difficult to skip, block or avoid the advertisements* that are integrated as part of the game environment. Lately, popular advertising media such as television and the Internet are increasingly disadvantaged by the emergence of technology and software that enables people to avoid advertising (Chambers, 2005). People can record movies or television programs using their digital video recorders (DVRs) and fast-forward through, or simply remove, commercials while watching these programs later on. Moreover, content filtering and ad-blocking software is becoming more and more popular among the Internet-using population (Chambers, 2005). For example, ad block plugins are some of the most popular Internet browser extensions worldwide. These plugins prevent advertisements from being displayed all over the web, and currently count over 198 million users (PageFair & Adobe, 2015). Consequently, practices where advertisements are programmed within the entertainment context, such as product placement in television programs, movies, and games (i.e. IGA), offer advertisers the chance of promoting their brands in an environment where users cannot blatantly avoid them (Herrewijn, 2015).

Throughout the years, IGA has also advanced from a very static towards a more *dynamic advertising medium* (Internet Advertising Bureau, 2007; Schneider & Cornwell, 2005). In the beginning, IGA was hard-coded into a game in its development stage, resulting in *static ads* that could never be changed or updated once the game was released. However, from the mid-2000s onwards, IGA has become much more flexible. Due to the online capabilities of modern digital games, advertisements can now be dynamically embedded into games. Access to the Internet enables advertisers to dynamically place and alter ad units in games and gather gameplay statistics. This way, ads do not have to be integrated in games in the form of static, unchanging images anymore, but can be delivered and updated in-game based on multiple criteria, such as date, time of day, ad frequency, and players' demographic, regional and gamer

profile, providing brand campaigns with a great amount of flexibility (Internet Advertising Bureau, 2007; Schneider & Cornwell, 2005).

Finally, games can offer brands the opportunity to become an integral *part of the digital game experience*, reaching out to players in a highly vivid, interactive and immersive entertainment environment. First of all, while other media rely primarily on one or two sensory channels (visual and/or auditory), digital games are able to produce a *sensorial rich and vivid environment* that is capable of presenting information to additional senses (Steuer, 1992). Haptic technology, for instance, allows players to receive kinesthetic and tactile cues while playing a digital game, enabling them to feel vibrations in their game controllers when their game characters take damage or when their racing car collides with an obstacle, providing a sense of danger (Nelson, 2005). Moreover, digital games are an *interactive medium* that requires an active audience. They give players the ability to control their own actions and perceptions: players do not just observe a car race across the screen; they actively control it, feeling its speed, maneuvering it between obstacles and opponents (Nelson, Keum & Yaros, 2004). Lastly, digital games offer players a highly *immersive experience*; they provide a particular form of mediated experience that is able to create the feeling of being drawn into the game world represented on-screen (Calleja, 2011). These characteristics provide new and interesting ways to interact with the game environment altogether (Nelson, 2005), but more importantly, they offer a unique opportunity for the integration of advertisements; high degrees of player interactivity, immersion and vividness can make players feel as if they are first-handedly controlling and interacting with a brand in a lively and exciting environment (Nelson et al., 2004).

Advertisers are not the only party that can potentially benefit from IGA, though. The practice is also attractive to *game companies* because it offers an *additional revenue stream* to subsidize the rising game development costs beyond the traditional model of revenue from retail sales (Boyd & Lalla, 2009; Chambers, 2005; Internet Advertising Bureau, 2007). This

ultimately also benefits the *gamer* as end-user. Digital games are more and more expensive to make, but game players have not felt this increase; due to alternative revenue streams such as IGA, the *retail prices of games have remained relatively static* (Boyd & Lalla, 2009; Chambers, 2005; Internet Advertising Bureau, 2007). Finally, if the advertising fits naturally in the game and does not interrupt the player's game experience, it can even make the virtual environment *more realistic and immersive* (Internet Advertising Bureau, 2007).

Despite its promising new branding opportunities and growth potential, however, IGA also faces several *obstacles*. The most obvious manifestation of this can be found in the rise and subsequent fall of several IGA-related companies during the last decade. In the early to mid-2000s, several companies were founded that focused exclusively on offering IGA services, such as Massive Incorporated (Microsoft), Adscape Media (Google), IGA Worldwide and Double Fusion. By the end of 2010, however, the majority of these companies ceased to exist. This development can be primarily attributed to two factors.

First of all, both advertisers and game companies have been struggling with the audience's negative reactions towards IGA they deem to be too intrusive. Gamers are extremely protective of their passion. If they disapprove of the commercial messages within their favorite games (for example, when the advertisements do not fit within the context of the game, disrupt their game experience or simply start to annoy them), they will voice their discontent among the widespread gaming community, potentially resulting in *consumer backlash* or a negative impact on the popularity and sales of both the game and the incorporated brands (Internet Advertising Bureau, 2007; Shields, 2012).

Moreover, many advertisers still do not fully embrace digital games as a viable advertising vehicle because of the continuing *difficulties in determining and optimizing the advertisements' effectiveness* (Boyd & Lalla 2009; Internet Advertising Bureau, 2007; Nelson 2002; Shields, 2012). IGA and its effectiveness have attracted the attention of both industry-

commissioned and academic research, which have repeatedly looked at the impact of IGA on people's *cognitive* response (i.e. brand awareness), *affective* (i.e. brand evaluation) and *conative* responses (i.e. purchase intention, buying behavior) to the brand(s) (Nelson, 2005; Skalski et al., 2010). However, most of these studies have produced mixed (and often contradictory) results.

In-Game Advertising Effectiveness

According to several *industry-commissioned studies* carried out by Nielsen Entertainment, IGA in sports and racing games helps to drive brand awareness and is able to significantly change consumer opinions in a positive way (Activision, 2005; GamesIndustry International, 2008; Microsoft Corporation, 2007). Research results show that average brand recall rates are considerably high, with brands being spontaneously recalled by more than 40 percent of participants. Moreover, these industry reports state that a high percentage of gamers show a more favorable attitude towards the brands and ads after playing the game, and that in general, participants do not mind IGA and even think it contributes to the realism of the game (Activision, 2005; GamesIndustry International, 2008; Microsoft Corporation, 2007). For example, in a research study conducted by Nielsen on behalf of IGA Worldwide, 82 percent of participants felt that games were just as enjoyable with ads as without, and there was a 61 percent increase in consumers' favorable opinions towards the brands advertised in-game (GamesIndustry International, 2008).

Another study of Nielsen in collaboration with Electronic Arts builds on these results and expands them even further by studying the impact of in-game ads occurring in several sports games in a large-scale field experiment. Using its consumer panel of 100,000 U.S. households, Nielsen found that IGA also influences buying habits. The study focused on households that purchased at least one of six EA Sports games containing a variety of product placements of the brand Gatorade, and compared them with households that did not purchase

any of these games. Results show that the advertising integrated into the games increased household dollars spent on Gatorade by 24 percent (Guzman, 2010).

These Nielsen Entertainment studies have to be interpreted with caution though, since it concerns research by and in the interest of the industry. However, not only the industry has shown a growing interest in IGA research; *academic studies* have also increasingly turned its attention to the effectiveness of IGA in recent years.

In the first published academic study on IGA, Nelson (2002) explored the effectiveness of placing advertisements in racing games in two experimental studies. Participants were asked which brands they spontaneously recalled immediately after gameplay, and after a delay of five months. On average, players were able to recall 25 to 30 percent of brands in the short-term, and 10 to 15 percent in the long-term. However, results differed greatly depending on the type of IGA (e.g. passive billboard versus interactive product placement) and the type of brand (e.g. local versus (inter)national, relevant versus irrelevant) that were employed.

Since then, academic research has focused on the effectiveness of IGA in a wide variety of game genres and situations. Results of these studies have been mixed. Chaney et al. (2004), for example, looked at IGA effects in a first-person shooter game and observed brand recall rates that were rather low. Participants generally recalled going past billboards in the game, but they had little memory for the brands that were featured on them. More specifically, the brands that were integrated were only recalled by 5 to 20 percent of the participants. Further, the in-game ads had a very limited effect on players' purchase intentions of the featured brands. These findings oppose those of Mau, Silberer & Constien (2008), however, who also looked at the effectiveness of advertising inside a first-person shooter game and found recall rates that were considerably higher. In their study, 68 percent of participants could recall the integrated brands correctly. Participants' attitudes towards the integrated brands depended greatly on the players'

familiarity with the integrated brands; attitudes towards an unfamiliar brand were enhanced, while attitudes towards a familiar brand deteriorated.

Academic analyses such as these offer a *more nuanced view* on the practice of IGA than the one publicized by the industry; they show that the integration of IGA is a complicated matter that is subject to a wide variety of characteristics. Findings often parallel the results of research looking at the effectiveness of advertising in other media (e.g. print, television, and the Internet), which has repeatedly demonstrated that ad effectiveness is dependent on a multitude of characteristics related to the advertisement (e.g. the type of brand that is featured, the prominence of the brand), the audience (e.g. gender, age, culture, prior experience with the medium), and the advertising context (e.g. the type of vehicle that is used, the amount of congruity between the context and the ad, a person's social environment, his subjective responses in reaction to the medium content) (Moorman, 2003).

Many of these factors have been shown to be of importance when examining the effectiveness of IGA as well (for an elaborate overview, see Herrewijn & Poels, 2014). For instance, concerning the *characteristics of the advertisement* that is integrated into the game, research has shown that IGA effectiveness greatly depends on the type of brand (e.g. local versus international brands) and the prominence of the brand placement (e.g. central versus peripheral location) that is being integrated. Furthermore, several studies argue that IGA effects are not only a function of the ad itself, since IGA is not encountered in a vacuum by a passive audience; the *characteristics of the player*, like his prior level of game experience, also seem to play an important role. Finally, research has demonstrated that the *characteristics of the context* in which the advertisement is embedded or encountered are crucial in light of its effectiveness as well, with examples including the congruity of the game and the ad (e.g. low versus high), the social setting in which the game is played (e.g. alone versus together with others) and the

player's subjective experience during gameplay (e.g. enjoyment, immersion) (Herrewijn & Poels, 2014).

Theoretical Models

Academics studying IGA and its effectiveness generally use several theoretical models to ground their research. Two theoretical models are of particular importance when studying the impact of commercial messages in the context of digital games, namely the limited capacity model of motivated mediated message processing (Lang, 2009), and the excitation transfer model (Zillmann, Katcher & Milavsky, 1972).

The *limited capacity model of motivated mediated message processing* (LC4MP) states that a person's ability to process information is limited, with people only having access to a limited pool of cognitive resources at a particular time (Lang, 2009). More specifically, the model implies that when people are oversaturated with stimuli, their processing capabilities (i.e. the encoding, storing and retrieval of information) will diminish (Lang, 2009). This has important implications for the effectiveness of IGA in terms of brand awareness. Digital games are highly interactive and involving media that bombard the player with a multitude of tasks and stimuli that all vie for attention at the same time. Getting a brand noticed and remembered in such an involving game context is not self-evident, since people allocate their cognitive resources to those aspects of an activity that are most relevant to them at a particular time, namely their primary task. In a digital game context, the primary task consists of actually playing the game; the player tries to process and act on the information that is most essential to his progression in the game (e.g. shooting enemies, driving a car as fast as possible in a race). Since people will focus their attention primarily on the playing of the game, this leaves fewer mental resources available for secondary tasks such as the processing of advertisements that are embedded into the background of the game (Lang, 2009). The LC4MP (Lang, 2009) is thus of

great importance when studying the player's ability to cognitively process the advertising messages that are integrated into a digital game.

Furthermore, the *excitation transfer model* argues that affect evoked by one stimulus can transfer to, and even amplify, a person's affective response to another stimulus (Zillman et al., 1972). In an advertising context, the excitation transfer model has been applied to explain a transfer of affect from medium content (e.g. a television program) to advertising that is encountered in its context (e.g. a television commercial), influencing people's evaluation of the ads and featured brands (Singh & Churchill, 1987; Yoo & MacInnis, 2005). The model is also believed to have implications for IGA. Advertisements in games are encountered inside the game and are seen as part of the game environment. When this environment induces a certain affective response (e.g. arousal, involvement), the valence of this response might subsequently transfer to the in-game ads as well.

Case Study: The Impact of Brand Interactivity

The previous section gave an overview of the different studies that have been conducted on the effectiveness of IGA, simultaneously showing which factors might influence this effectiveness and which theoretical models have been used to ground the uncovered results.

In what follows we want to take a closer, more elaborate, look at the mechanisms that might underlie the effectiveness of an advertisement integrated into the world of a digital game. Consequently, we present a case study in which we consider the impact of one factor in particular that can affect the way an in-game brand placement performs: its *interactivity* (Herrewijn, 2015).

As mentioned earlier, interactivity is a crucial factor to consider in a digital game context. It is one of the characteristics that distinguish digital games from other, more passive media (e.g. print, television). By using an input device or game controller, players can exert agency over the actions and movements of their avatar in the game world (Calleja, 2011): when

they press a button (e.g. while playing computer or console games) or touch the screen (e.g. while playing mobile games), the game responds and the avatar will act accordingly on the screen. They can control their avatar's movements and perceptions, and make their own choices. Players do not just observe a predetermined chain of events unfold; they can actively participate in them and decide their outcome (Nelson, 2002; Nelson et al., 2004). This feedback loop between players and their avatar in the game world thus makes up a vital and indispensable part of the digital game experience; without it, there would essentially be no game (Calleja, 2011).

The highly interactive environment offered by digital games also has important implications for IGA. Within such an environment, it becomes possible to let players actually interact with a brand in a meaningful way. Racing and sports games often contain a large range of branded vehicles and/or clothing that the player can customize and compete with. Eating or drinking products and observing a certain effect on the player character (e.g. regaining a certain amount of health or energy points after drinking a can of soda) is also commonplace in games, as is the integration of products that can be used as tools, accessories or media (e.g. using a certain brand of cellphone to communicate with other players or non-player characters). Finally, there have also been instances in which games let players actively engage with billboards, by unveiling more images and/or information when the player touches or activates it (Herrewijn & Poels, 2014). Such brand interactions can elevate a brand from being a mere background prop to being a major part of the player's gameplay (Nelson, 2005; Skalski et al., 2010). However, the impact of brand interactivity on the effectiveness of the brand placements in terms of brand awareness and evaluations has barely been touched upon in academic research.

An exception to this is Nelson's study (2002). Nelson (2002) shows that varying degrees of brand interactivity can indeed have a significant impact on the effectiveness of IGA. She showed that in the context of a racing game, selecting and racing a branded car led to higher

brand awareness than driving past passive billboards on the side of the road. This finding can be framed in the context of the *LC4MP* (Lang, 2009) that we discussed earlier. Because the branded car constituted an essential part of the player's gameplay (i.e. driving it was crucial to the player's progress in the game), it was incorporated as a part of the player's primary task. As such, the brand in question demanded more explicit attention, resulting in a more elaborate processing. The passive billboards, on the other hand, were not imperative to the player's headway in the game and therefore remained part of the player's secondary task, receiving less attention.

Moreover, research shows that imagined interaction with a brand also leads to better brand attitudes. For instance, Escalas (2004) shows that when people imagine themselves using a product in a narrative context, they are distracted from its commercial nature and do not think critically about it. Moreover, in compliance with the *excitation transfer theory* (Zillman et al., 1972), if the imagined interaction evokes positive feelings, those feelings get transferred to the advertised product as well. Surprisingly, this point-of-view has never been studied in an IGA setting before.

The goal of the current study was therefore to investigate the impact of brand interactivity on player responses towards IGA in greater detail, taking into account both brand awareness (i.e. brand recall, brand recognition) and brand evaluations (i.e. brand attitudes).

Method and Rationale

In order to do this, we designed an *experiment* in which we asked participants to play a digital game containing IGA for approximately 20 minutes. We worked with the computer version of the action role-playing game Fallout: New Vegas (Bethesda Softworks, 2010). We used the game's official editor to create our own game environment for use in the experiment. This made it possible to fully control the structuring of the gameplay (e.g. player perspective, spatial lay-out of the game level, game difficulty) and the creation and inclusion of IGA (e.g.

types of brands, types of IGA, number of exposures) in the game environment, resulting in a highly authentic game scenario in which to analyze IGA effectiveness.

Within this game environment, we manipulated brand interactivity as a *within-subjects factor*. More specifically, we included two different types of IGA in the experimental game. We contrasted between *brand placements* that could be *interacted* with in order to gain an advantage in-game (and that thus constituted a central and active part of the player's gameplay) on the one hand, and *poster advertisements* with a *passive* role on the other.

Because the original game makes use of advertising for fictitious food and drinks (e.g. "Nuka-Cola", a soda brand), we decided to use these product categories as well. We chose to work with real brands that were unfamiliar to our experimental population (since they are not available in their country of origin), namely "Mello Yello", "Reese's Pieces", "Vernors", and "Baby Ruth". This was done in order to create a credible IGA scenario while avoiding effects of prior brand exposures or pre-existing brand attitudes. Familiarity with and attitudes towards the integrate brands were assessed beforehand, in a *pre-test* involving 43 people (32 male, 11 female; M_{age} = 22.23, SD_{age} = 4.02).

The brands "Mello Yello" and "Reese's Pieces" were integrated as *interactive brand placements* (i.e. bottles of soda, boxes of candy) in the game. These product placements were scattered around the level (see Figure 1) and were available from vending machines (see Figures 2 and 3). They could be picked up and consumed to gain health points (e.g. when the player got hurt). Since consuming these products was the only way to regain health in-game, people had to actively search for them, and use them when needed. Moreover, the brands "Vernors" and "Baby Ruth" were integrated as passive poster ads, which were put against the walls of the game level (see Figure 4). Each brand was integrated into the experimental game level on six different locations, and was encountered 7.25 times on average (SD = 1.73), with no significant differences in the number of exposures between the different brands ($F(3, 162) = 2.35$, $p = .08$).

When participants finished playing the game, they were asked to fill in a self-report questionnaire. This questionnaire consisted of questions regarding the player experience (e.g. players' pleasure and arousal during gameplay were measured by means of Lang's (1980) 9-point self-assessment manikin), the effectiveness of the in-game ads (i.e. brand awareness was assessed by measuring brand recall and brand recognition; brand evaluations were assessed by measuring brand attitudes), and participants' socio-demographic (e.g. gender, age) and play-related characteristics (e.g. prior game experience, game frequency).

62 people (57 male, 5 female) between 18 and 37 years old (M = 22.32, SD = 3.21) and of Belgian nationality eventually participated in the experiment. Most of the participants were experienced gamers who had been playing digital games for six years or more (6 to 8 years: 22.6%, 9 years or more: 74.2%) and played games on a weekly or daily basis (weekly: 30.6%, daily: 64.5%). On average, participants experienced a fair amount of pleasure (M = 5.48, SD = 1.20) and a moderate amount of arousal (M = 3.77, SD = 2.05) during gameplay.

Results and Conclusions

The findings of the study show that, as expected, the manipulation of brand interactivity resulted in significant differences in *brand awareness* and *brand attitudes*, with the interactive brands attaining significantly higher awareness scores and attitudes than brands that were integrated in a passive way (see Table 1).

Table 1. The impact of brand interactivity on IGA effectiveness.

	Brand interactivity							
	Interactive brands		**Passive brands**					
	Mello Yello	**Reese's Pieces**	**Vernors**	**Baby Ruth**	**ANOVA**			
	(a)	**(b)**	**(c)**	**(d)**				
IGA Effectiveness	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*F*	*(df)*	*p*	η^2
Brand recall	.27 (.43)[b,c,d]	.09 (.27)[a,c,d]	.00 (.00)[a,b]	.02 (.13)[a,b]	16.21	(3, 174)	< .001	.22
Brand recognition	.73 (.45)[b,c,d]	.44 (.50)[a,c,d]	.24 (.43)[a,b]	.18 (.39)[a,b]	23.53	(3, 183)	< .001	.28
Brand attitude	3.37 (1.19)[c]	3.50 (1.10)[c]	2.98 (.92)[a,b]	3.14 (.92)	4.64	(3, 183)	.004	.07

Note. The results from Bonferonni post-hoc tests are indicated by the letters in superscript.

Brand attitudes were measured by the means of three 7-point scales, with 0 being very negative and 6 being very positive.

Concerning *brand awareness*, results show that the interactive product placements were recalled ($F(3, 174) = 16.21$, $p < .001$, $\eta^2 = .22$) and recognized ($F(3, 183) = 23.53$, $p < .001$, $\eta^2 = .28$) significantly better than their passive counterparts.

In the case of interactive brand placement "Mello Yello", for instance, 27 percent of the participants spontaneously recalled the brand, while 73 percent recognized the brand logo afterwards. Taking into account that people were not familiar with the brands prior to participation in the experiment and only played the game for a short period of time, memory for the interactive placements can be considered to be remarkably high. The brand awareness scores of the passive poster advertisements, on the other hand, were much lower. For instance, passive placement "Vernors" was recalled by none, although its logo was later recognized by 24 percent of the participants.

Additionally, we also found a significant difference in brand awareness between our two interactive brands, with "Mello Yello" attaining higher scores than "Reese's Pieces". This may have been a result of the way in which they were implemented into the game. Although both brands were integrated as interactive brand placements (i.e. bottles of soda, boxes of candy), they were also available from vending machines. The "Mello Yello" vending machine, however, featured an additional "Mello Yello" logo (see Figure 2), while the "Reese's Pieces" vending machine did not (see Figure 3). Apart from the interactive nature of the brand placements, their *prominence* thus also seems to play an important role in determining their effectiveness.

Regarding brand awareness, the results are therefore in line with the study of Nelson (2002) discussed earlier, and further support the theory put forward by the *LC4MP* (Lang, 2009): because the interactive brands make up an essential part of the gameplay, they are

incorporated as a part of players' primary task, demanding more explicit attention than the passive brands and resulting in more elaborate processing.

Furthermore, the interactive placements also attained significantly higher *brand attitudes* than the passive poster ads ($F(3, 183) = 4.64$, $p = .004$, $\eta^2 = .07$). Participants remained neutral towards the passive brands, but reported slightly more positive attitudes towards the interactive brands. Again, considering that people were unfamiliar with the brands beforehand and only played the experimental game for approximately 20 minutes, this positive change in attitudes for the interactive brands is noteworthy. This finding is therefore in line with the expectations formulated by Escalas (2004) and the *excitation transfer theory* (Zillman et al., 1972). Interacting with a brand in a digital game context distracts players from its commercial nature, and if this interaction evokes positive feelings, these feelings can get transferred to the advertised brand as well.

In conclusion, the results of the study suggest that the *integration of brand placements that can be meaningfully interacted with in-game* is a far more effective IGA strategy than incorporating passive ads, both in terms of brand awareness and brand evaluations. Playing digital games is an interactive experience that offers new, interesting ways for the integration of advertisements. When the player is able to interact with a brand in-game and has to actively use it in order to successfully finish the mission, the brand will be closely tied to his primary task, demanding more of the player's attention and opening up possibilities for the transfer of positive feelings associated with the encounter. Brands that are simply used as props in a scene, however, are less meaningful to the player's overall experience, resulting in lower brand recall, brand recognitions and brand attitudes. It therefore seems best for advertisers to *avoid the passive banner ad approach*, and work together with game developers to develop interactive approaches that give the player the opportunity to feel, control and/or interact with the brand in creative ways.

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